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General Scientific

THE DIAGNOSIS AND MEDICAL TREATMENT OF GASTRIC ULCER.*

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In the discussion of this subject I will include duodenal ulcers as well as those involving the stomach proper, as the first portion of the duodenum is anatomically a part of the stomach. The great number of ulcers in the duodenum occur in this portion. The deaths recorded by the general medical man as directly due to ulcer are comparatively few. Out of 30,859 deaths recorded there were 135 deaths due to ulcer of the stomach or duodenum or 4.3 per thousand.

In trying to differentiate between acute and chronic ulcers we have to rely largely on the history of the individual case, as an acute exacerbation of an old ulcer may give signs and symptoms similar to one of short duration. It is very evident that in the past as well as at the present time many acute ulcers have been and are being overlooked. The acute ulcers are usually round or oval with clean edges with a V-shaped base, if they involve more than the surface of the mucous membrane. When the serous coat is involved we have an accompanying lymphangitis. The ulcer may be very small and situated on either side of the pylorus and near the muscular ring and we have a condition similar to fissure in ano. The more chronic ulcers have an indurated edge with an increase of the connective tissue in the surrounding tissues, muscular hypertrophy, a poor blood supply to the scar tissue, and the formation of adhesions, when the outer layer of the stomach wall is involved. These few remarks on the pathology are necessary for a clear understanding of the duration of the disease.

As may readily be seen, our best results are to be obtained early in the trouble, the longer the ulcer has existed the poorer our results until we come to those of long duration when all we may hope to do is to cause a healing of the denuded surface, without any result on the deformities or adhesions.

All ulcers tend to heal by themselves. This may be complete and apparently is in many instances, while in others it reaches a certain point and then stops.

Ulcers may occur at any period of life from infancy to advanced age, but most frequently begin during the period between 20 to 40 years of age.

The symptoms of ulcer are few, and we may say only two are characteristic; these are pain and hemorrhage; all the others are secondary. The most characteristic symptom is pain, and this may vary greatly from a painful sensation of weight or oppression to a gnawing hunger sensation or severe pain. This pain is usually referred to the epigastrium, but may be referred to the right or to the left hypochrondriac region or, in an occasional chronic case, to the region of the splenic flexura of the colon. The pain has a tendency to radiate to the back, and is at times only complained of in this region by the patient. This pain is most frequently on the left side and may be situated anywhere from the lower dorsal to the upper lumbar region.

The time of occurrence varies in different patients, and even in the same patient under different conditions, although there seems to be a rather marked tendency for each patient to have a more or less regular time for the pain to occur.

The time of appearance has as a rule, little, if any, relation to the ulcer, the pain being rather dependent on the depth of the ulceration and the lymphangitis.

Ulcers involving the superficial layer of the mucous membrane may cause no pain whatever; when the ulcer is situated at or near the pylorus and causes spasm of that portion of the organ, the pain is apt to be more severe, and lasts a longer time, this being due to the inability of the stomach to empty itself in the normal length of time and to a hyper-secretion of gastric juice. In the chronic cases the secretion may be continuous.

In practically all cases the pain is relieved by emptying the stomach either by vomiting or by the natural route, or by rendering the contents free from free acid by foods or alkalies.

The coarse foods in some instances aggravate the pain or bring it on almost immediately after eating. This is generally the case when there is an acute process to deal with and the lesion is in the stomach proper.

The tendency of large meals to increase the duration and severity of the pain is the underlying cause of the

* A paper read before the Bridgeport Medical Association.

lack of food taken by many ulcer patients. When the pain is increased by exercise it generally means there is a lymphangitis or adhesions present.

It must be borne in mind that an ulcer may exist without pain and visible hemorrhage. These cases frequently go undiagnosed and are classed with the neurosis.

When pain is complained of in the abdomen for a considerable time, never make the diagnosis of a neurosis until every other possible cause has been eliminated.

Vomiting is most frequently induced to relieve the pain or distress in acute ulcers, by the removal of the food and acid contents. In the chronic cases the same is true with the addition that adhesions or stenosis may prevent the stomach from emptying in any other way.

In the chronic ulcers the pain or distress is less severe except during the acute exacerbation the pain or discomfort is less liable to vary in character and appears with greater regularity.

The pain appears at the time when the free hydrochloric acid makes itself evident and remains until it disappears.

When there is a lymphangitis or adhesions there may be pain caused by the peristaltic wave, or by the weight of the food, without any particular connection with the amount of acid in the gastric fluid. It is quite characteristic, especially in chronic ulcers, for the patient to be awakened about two or three o'clock by pain; this also makes one suspicious that the ulcer is near the pylorus or in the duodenum. When the lesion is in the stomach proper, away from the pylorus, the pain generally appears in one or two hours after the meal, if situated at the pylorus or in the duodenum at the end of three or four hours. If the ulcer has involved the adjoining organs the pain may be constant for days and not affected by food, or, if the ulcer has brought about the marked pyloric changes, we may have a continuous secretion of highly acid gastric juice and a continuous gnawing pain. Before leaving the subject of pain I want to call your attention to a sensation of pain or dragging some cases have every time they swallow. This sensation may persist for a long time after a cure and probably means adhesions have been formed; it might also be mentioned that some chronic cases may have pain in the upper abdomen and at the same time a pain in the neck without any evidence of a lesion in the esophagus.

It is undoubtedly true that every ulcer bleeds at some time during its course, but the bleeding is so small in amount that it could only be detected by careful laboratory methods or, if considerable in amount, is passed with the stool and unnoticed.

The bleeding in the acute ulcer is usually larger in amount than in the chronic cases. When the bleeding is free we have the same symptoms of hemorrhage as in any other part of the body with the addition of vomiting of blood, and after a few hours or days the passage of blood in the stool. The hemorrhage may be preceded by severe pain, which stops after the bleeding, or the bleeding may be the first sign or symptom. For all cases of gastric pain or acute anemia it is wise to examine the stools and gastric juice for blood, but always bear in mind that it probably is unwise to pass a tube when acute ulceration is suspected.

Therefore, before passing the tube try the thread test for signs of bleeding, and by this means we frequently detect blood when no bleeding was suspected and also locate the site of the trouble. One negative string does not prove there is not an active ulcer, so pass the string on two or more occasions, being sure it has passed to the duodenum. A negative string returned on several consecutive occasions is pretty positive proof we have no active bleeding.

To test the gastric juice when that has been withdrawn, I prefer the benzidin test, using either paper or fluid. The Roentgen ray of late has come to our aid and has cleared up many obscure cases and will clear up many more when the clinician and the Roentgenologist work more in accord.

The gastric juice in the acute ulcers is to a certain extent an unknown quantity, but where it is examined there may be an increase in the acidity, but it not infrequently is normal or even a state of subacidity may be found, especially if there has been a considerable loss of blood. In the chronic cases the same is true except when the pylorus is involved, when we generally have a hyperacid and increased amount of gastric juice. When we find a hypersecretion constant or intermittent always suspect a chronic ulcer.

Do not put your faith in an analysis of the gastric juice, but rather make your diagnosis before making an analysis, except possibly for blood, and rely on the history, a carefully prepared pain chart, the string test and the Roentgen ray.

From the above more or less detailed symptoms we easily see that the patient complains of varied kinds of pain or distress and in many cases our best skill will be required to come to a definite diagnosis.

Always remember that an attack of appendicitis may similate ulcer exactly, especially the chronic appendices, and when this is the case, we may have to rule out one or the other by treatment; an ulcer cure first; if this fails to relieve the case, operate and remove the appendix.

Gall-bladder disease may also give us considerable trouble, but as a rule we get the characteristic tenderness over the bladder at some time, and a study of the pain if charted will show a lack of regularity of time for appearing and duration; this is true also of appendicitis, but not so much so. Our best results are being obtained in the more acute cases, and as our ability to diagnose this condition early increases, fewer cases will be operated upon. The primary object in treating ulcer is to obtain rest for the stomach and body, and this can only be obtained by putting the patient to bed.

The recumbent position must be kept for from two to four weeks or even more. If there has been recent hemorrhage or signs of peritoneal irritation, the rest must be absolute. When there are signs of hemorrhage it is advisable to have the patient abstain from all food by mouth for a period of from three to five days or until the stools show no evidences of blood. This fasting can not be carried out in all cases, as its effects on the patient are injurious and must be watched carefully.

During the period of fasting the fluid is supplied per rectum, giving the fluid by means of a Murphy drip method. The mouth must be kept clean, as a dirty mouth apparently adds much to the sensation of thirst, which is the most annoying symptom during this period. Under no circumstances is it justifiable to keep these patients on starvation for the long periods formally carried out. It is not essential to try to give food per rectum during this period as so little nourishment is taken up that its value is practically nil.

The more manipulation of the colon, the more peristalsis of the stomach is excited, especially about the pylorus.

After the period of rest in the cases with grave symptoms and at once in the other cases we place the patient on a milk diet, giving five ounces of milk every hour

from 7 a. m. to 10 p. m., this amount to be given for the first three days alone in the severe cases. In the less severe we can give one egg the second day and add one every day until eight are being taken during the twenty-four hours.

In the more severe cases the eggs are begun about the third day and increased in the same manner. From the fourth day to the tenth we gradually increase the milk until ten ounces are taken at one time, also having increased the time between feedings so that at this period the feedings come every two hours. From the tenth to the fourteenth day the intervals are the same, the amount of milk is the same, but we add cereal gruels thoroughly cooked and strained, arrowroot and soft boiled or coddled eggs. During the third week the diet remains the same except that larger quantities are given, and finely minced chicken and crackers as well. By the fourth week we give the feedings every three hours, chops, toast, mashed or baked potatoes, in addition to the foods already mentioned. From this time on the diet is gradually added to. Care must be taken for at least six months. All coarse vegetables, raw fruit, spices, very hot or iced foods and alcoholic drinks are forbidden, as are tea and coffee. In cases with an excess of acid, meats and its extractives are best taken very sparingly, if at all. For a period of six months it is wise to have the patient take five meals a day.

A breakfast consisting of cream of wheat, strained oatmeal, farina or one of the finer cereals, crackers or rolls with butter well masticated, two eggs, soft boiled or poached. 10.30 a. m.-11 a. m., a glass of milk or cream and vichy; 1 p. m., a choice of the following: oysters, white fish, chicken, chops, mashed or baked potatoes, young vegetables passed through a collander, macaroni, plenty of butter, when possible freshly made and unsalted, and the plainer desserts, as rice pudding, farina, tapioca, corn starch, junket and custard; 3-4 p. m., same as 11 a. m. For dinner, the same as at 1 p. m. All foods must be well mastncated so that they enter the stomach finely divided and are consequently more quickly passed into the intestines. For the last few years we have had the duodenal method of feeding which gives most satisfactory results and may be used in all cases except after an active hemorrhage, and in these cases it is advisable to wait for a few days and treat according to the above method. The duodenal tube is passed and allowed to remain in situ for a period of ten days or two weeks, or even longer. The food to be injected into the small intestines consists of six to eight ounces of milk, one egg and one-half ounce of sugar of milk. This food is given every two hours and must be given slowly, 15 minutes being required for a meal, and it must be at body temperature.

If distress is caused the food may be given in smaller quantities every hour. If diarrhea comes in it generally means too much sugar. It appears to me that this method of ulcer treatment is particularly adapted to ulcer at or near the pylorus, duodenal ulcers and the exacerbations of the chronic ulcers. During the period in bed hot moist compresses are kept on the upper abdomen. When there is an increase of acid or a hypersecretion, magnesia usta and bismuth are of value; for the constipation use enema or liquid petroleum. I have never seen any beneficial results from the use of silver nitrate in these cases.

In a few cases with severe pain it may be necessary to use codeine or morphine for one or two days, never longer. The complications I have left undiscussed, my endeavor being to outline the ordinary cases.

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THE TONSIL PROBLEM.

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Until the long-discussed question of the function of the tonsils is answered with authority, more or less radical differences of opinion must obtain in deciding when and how to deal with these organs.

Anatomists in general regard the tonsils as lymph nodes forming part of the first line of defence, and placed to guard a channel which is much exposed to harmful invasion.

To this function other observers have added, the secretion of mucus to lubricate food and aid in its swallowing and digestion; a blood-forming agent like the spleen and bone-marrow; perhaps, as among the glands of the thyroid type, that of forming an "*internal*" secretion.

On the other hand the tonsils have been regarded as evolutionary relics whose usefulness is now gone, akin to the vermiform appendix, and in our present stage of development purely a menacing nuisance whose existence can well be dispensed with,—therefore a fruitful field for surgical endeavor.

So wide spread is this feeling now, in our cities at least, that many a mother bringing a child for examination asks first "Has he got tonsils?"—and although vaguely troubled with a feeling that "*tonsils*" are a newly-acquired possession of modern youth as distinguished from the simpler equipment of her own childhood, she feels too that medical progress has here kept pace with Providence and can meet this new enemy without fear.

Where so many theories are applicable it is likely that none contains the real answer but each has a measure of the truth to sustain it. The tonsils form part of the lymphoid tissue which is plentifully distributed throughout the mucosa of the digestive and respiratory tracts either as scattered small "follicles," or as large collected masses such as the Peyer's patches of the intestines. Without doubt these lymphoid elements share in the swallowing and digestive acts throughout. A certain dryness of the throat that is noted in most cases, for a time at least, after complete removal of the faucial tonsils in adults indicates that the moistening and lubricating function of the tonsil is a factor, and in the dryness of atrophic states of the mucosae like in xerosis of the conjunctiva, or rhinitis and pharyngitis atrophica, early loss of the lymphoid elements plays an important part. These nodules have a reservoir or sponge-like capacity for collecting fluid quickly. They swell up rapidly when the mother tissue is irritated and while some of this is due to hyperplasia of the lymphoid cells, much is caused by fluid transudate. That they are of defensive character too, is shown in the frequency with which organisms are stopped there with consequent ulceration, as in the attack of Typhoid, Tubercle, and other germs in the intestines. Phagocytes are numerous at such points and perhaps their presence is enough to account for the supposed "blood-forming" activity of the lymphoid tissues.

The *colds* from which the majority of us suffer from time to time are in effect a visible expression of this defensive action. It is probable that the idea that "nearly all acute diseases begin with a cold" is founded on those observed efforts at defense against invasion which the mucous membranes exhibit.

There is little evidence to support the theory of an "internal secretion" elaborated by the tonsils, nor does

it seem likely that any possible element of this kind can be of importance. Certainly ill effects traceable to the loss of such a secretion after complete removal of the tonsils are not observed as yet. I have in mind some cases which I operated on in this way (*tonsillectomy*) eight years ago.

On the other hand there is plenty of clinical evidence to show that tonsil tissue once diseased, has a strong tendency to keep dormant toxic matter locked up in its crypts and fissures, thereafter making of itself a source of recurring inflammation and absorption.

There is undoubtedly a state of enlarged tonsils in health in many children. In other words there is frequently present a physiological hypertrophy which develops as part of the elaboration of the teeth and digestive tract generally, as the child grows. Numerous observers have remarked this and have noted also that growth of the lymphoid ring in its different parts accompanies varying periods of tooth development.

The pharyngeal tonsil which in an enlarged state we speak of as "*adenoids,*" is the first to show activity; later when "*teething*" has begun the faucial tonsils enlarge, and later still we find the "*lingual*" tonsil,—the lymphoid tissue on the base of the tongue.

Swain points out that the tonsil whatever its other functions are, if any, has that of a lymph node beyond doubt and as such should not lightly be destroyed. "Whatever its humble office may be it had better be allowed to perform it; if not, some other deeper-lying node has got to do it, and when this deeper node does by chance protect from an invader which the removed tonsil should have held up, the septic matter is nearer the more vital portions of the body by having gotten beyond the first barricade."

Some years ago, the writer had frequent and extensive opportunities to examine the throats of Indians on the Pacific coast. The heads of these "Siwashes" are of the broad, flat-faced, type and large tonsils with some adenoid growth is the rule among the young.

Like all aborigines they are little subject to disease while living their customary life away from civilization, but fall easy victims to the white man's ills when their environment is changed and particularly when forced to live in houses and adopt the white man's ways and food.

The large tonsils are normal and must, I think, be of use and protection to these people under proper conditions, but to preserve this function an open-air life is necessary. This insures an active circulation of healthy blood, a feature which is imperative if such tissues are to resist invasion. Lacking this necessary support the tonsils afford a resting place for organisms and favor disease.

This altered role can easily be observed in such persons and from the fact we can deduce the reason why the tonsils are so frequently a source of trouble in our own throats.

It is interesting to note in passing that the habit of constipation with which so much difficulty is found among the *higher* races is also largely a house bred fault, and it is possible that the lymphoid tissues throughout the digestive tract have a part in this. Peristaltic movements are in the end but a continuation downward of the swallowing act and if we concede that the tonsils provide moisture, mucus, and perhaps some mechanical aid in the swallowing of food it is a fair presumption that the intestines also derive help from their endowment with this type of tissue. Impairment of active lymphoid tissue in the digestive tract would therefore be a factor in causing constipation. The fashion now so common of supplying mineral oil for relief of this trouble is only a step along from the oily sprays and applications of vaseline, or other ointments, with which both layman and physician have long tried to supply in dry throats the missing mucus and moisture without which comfortable action of the part is not had.

While admitting then the very probable value of the tonsils in health we must acknowledge that, when diseased, these tissues are a source of real danger to the host. They may be compared with the teeth,—among primitive people the teeth are, as a rule, finely developed and strong, and in little need of attention throughout life. With civilized, house dwelling races, the teeth are poor, decay early, and are frequently a source of both local and general disease.

It is no wiser to insist that diseased tonsils should be left to perform their function that it is to argue that the dentist is wrong in extracting infected and ulcerated molars.

There are two matters of importance for us to decide in any given case:

(a) Is this a case for operation or not?

(b) What plan of operating is best?

In deciding the first point we emphasize the health or disease of the lymphoid tissue,—not the mere size unless this is so marked as to be obstructive to breathing, swallowing, etc.

In writing on this subject some ten years ago the writer ventured a protest against the growing enthusiasm, especially among the younger men, for operation on "*enlarged*" tonsils. In selecting the subjects suited for operation size seemed to be the chief consideration and so varying can be the estimates of this that in time the main rule governing the matter must resolve itself to the good old guide of the faction fight—"Wherever you see a head hit it."

Consideration of this problem leads to the conclusion that we may, however, safely specify certain types of cases for operation; among these the following will be found:

(1) An individual who suffers from recurring attacks of tonsillitis will be better off by having these tissues cleanly removed.

(2) Persons who have mild attacks of tonsillitis and are also troubled with rheumatism or what, for want of more exact definition, we term rheumatism, may be greatly relieved in both respects and many of them are cured, by operation on the throat.

(3) Cases of recurring quinsy,—and with these I include the less violent anginas having small, often several, localized pus collections in and about the tonsil.

(4) Disease of the tonsillar crypts which causes foul breath. Cleansing and cauterizing the crypts or slitting them open for drainage with subsequent applications of silver, etc., should first have trial in the milder cases but in many this will not prove of lasting value and enucleation will be necessary.

(5) Cases associated with ear disease especially of the suppurative type,—recurring attacks of otalgia or of dulled hearing in young patients. A very definite relation commonly exists between the affected ears and the unhealthy throat, and operation is fully justified.

(6) Cases of mouth-breathing in youth especially if associated with mental heaviness and frequent mucopurulent catarrhs of the nose.

Promise of speedy and lasting relief after operation should not be too confidently made in these cases. Many of them do well but some also have a definite lack of development of the bone-walled spaces in the nose and throat which only time can remedy. For such cases careful coaching as to proper habits of living is even more important than the removal of obstructing soft tissues.

(7) A certain limited class of cases in children in which reflex nervous disturbance is attributable to the unhealthy tonsil and adenoid growth.—It is certain that an unstable nerve balance, as shown in some cases of chorea-like switching, restless sleep and enuresis, or even mild convulsive seizures, is due at times to these faults and can be remedied by operation.

As to the method of choice for operation, when this is necessary, it is generally conceded now that a thorough enucleation should be done in all cases. A thorough removal or none. The old method of cutting out only the tissue that could be grasped in a tonsillotome while of service for *"enlarged"* tonsils gave many unsatisfactory results in the cases where diseased tonsil tissue made a good operation most necessary. Persistence of symptoms due to the unsatisfactory throat, or recurrence of the tonsil required successive operations in many cases. This can and should be avoided by successful enucleation. The term *"removal in the capsule"* is perhaps not correct as it is not certain that the tonsil has a definite capsule in the sense that the kidney is an escapsuled organ for instance. The question is still unsettled and it is probable that the tonsil *"capsule"* is more of the type that we have about the eye ball and which is called Tenon's capsule. It is a firm fibrous sheath formed from the neighboring fascia and is at once a bed for the organ involved and sufficiently part of it to define it from the surrounding tissues. It is because of this relation to the fascia of the pharyngeal wall that some hesitation is felt about removing it with the tonsil, in that it not only supports the tonsil but aids in giving firmness and strength to the throat generally.

It is argued that removal of this capsule may thus impair the good feeling and activity of the throat and result in some loss of power, if not in ordinary tone-production at any rate in the ability to speak at length.

From my own experience I am convinced that there is a measure of truth in this. I have never seen any serious after-effects from the operation and several professional singers on whom I operated with some misgivings on this score have assured me that so far from harming the voice the operation was an actual help, giving a roomy, free feeling in the throat and enabling them not only to get a better and fuller tone scale but to do this with less effort than formerly.

In the case of one young woman for whom I did a tonsillectomy and also removed some troublesome nodules of lingual tonsil this effect was so striking that both her friends and her singing teacher remarked the improvement. On the other hand in a few cases the patients have reported a loss of throat strength and some dryness of the pharnyx for months after the operation. These conditions gradually improved and proved of little moment at their worst. Several of these patients were of unusual intelligence and told me that all the fault they could note after the lapse of six months or a year was some loss of ability to speak at length without rest. One who is a public lecturer tells me he cannot throw his voice out over an audience for an hour without weariness and some ache in the throat, as he had formerly been doing for years. He is so much better physically however that he gladly pays this small price for the relief, and this I think is sufficient to settle any question of the kind. The proposal that before removing the tonsil a section should be cut off and examined to see if the organ is diseased or has only a healthy hyperplasia does not appeal to me as practicable in every day work.

Of the methods of removal it may be said that several equally good are advocated, each offering advantages which appeal to different operators.

The operation should not be done without anaesthesia of some sort. Among the anaesthetics there is also considerable choice. Ether is the most commonly used here and is probably as safe as any. Gas anaesthesia is too short to serve most operators, although with the Sluder instrument it will be sufficient as a rule. At one time I had a wide experience in the large service in Golden Square Throat Hospital in London, where we did a great many of these operations with nitrous oxide gas, used for patients over twelve, and the combination of alcohol, chloroform and ether called the *"A. C. E.* mixture," given to younger patients. The plan worked well but this anaesthetic has never found favor in America. It was customary to loosen the tonsil with finger dissection and cut it off with a MacKenzie tonsillotome. The adenoids were removed by curetting.

For adults I have for the past year or so used novocain and Adrenalin for local anaesthesia. It is better than the quinin and urea we used before novocain was introduced, and is much safer than any cocain preparation.

If the peri-tonsillar tissue is well injected with this solution a thorough enucleation can be done quite painlessly. At least fifteen minutes should lapse after the injection before the operation is started. There is a paralysis of the palate and pharnyx for some hours after, a feature of which the patient should be advised. For the after pain and headache in adults it is best to give a sedative. Aspirin, phenacetin, caffein and dionin may be ordered in suitable doses as required. Cold compresses constantly applied to the throat for several hours after operation are helpful in all cases.

Very often in young patients the tonsil can easily be everted by grasping it with forceps and pulling it out from between the pillars. It mushrooms out so freely that little or no dissection is then necessary and the cutting instrument, easily adjusted, is slipped in place and the mass cut off. I have for several years used a snare which embodies a number of useful features for this work, made for me by Muller. I append a cut of the instrument.

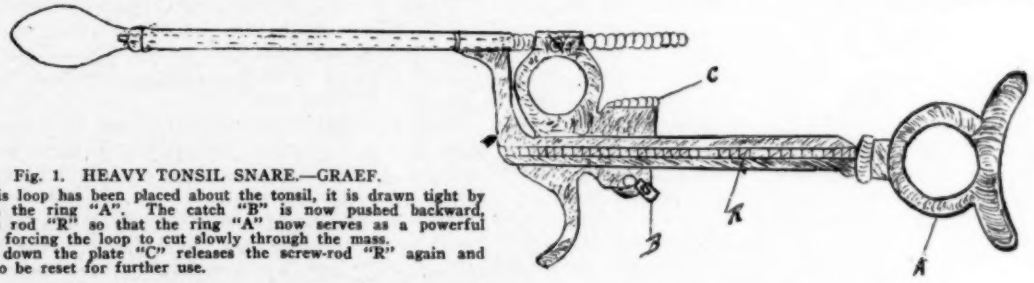

Fig. 1. HEAVY TONSIL SNARE.—GRAEF.

When this loop has been placed about the tonsil, it is drawn tight by traction on the ring "A". The catch "B" is now pushed backward, locking the rod "R" so that the ring "A" now serves as a powerful turn-screw, forcing the loop to cut slowly through the mass.

Pressing down the plate "C" releases the screw-rod "R" again and permits it to be reset for further use.

Before applying the snare if the tonsil cannot be everted as above, it should be dissected loose from its adhesions. In children the method of finger dissection is easy in

most cases although there is more trauma and tearing of the surrounding tissues at times than need be. In others, and in all older patients, especially where inflammatory adhesions of the faucial pillars complicate the problem, some form of dissecting instrument is preferable. Of these there is great variety and for practical purposes they are of about equal merit.

An instrument for holding the tonsil while dissecting it free is an important aid. It is best to have several types of these as one will do better on some tonsils than another. For general use I find the instrument shown herewith the most serviceable of the half dozen or more I have tried.

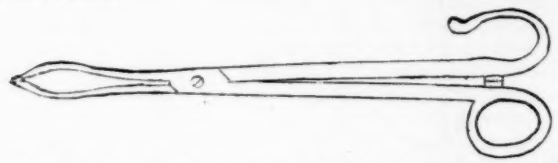

Fig. 2. This tonsil forceps has an excellent "bite" and holds well in most cases. The open ring on the handle permits a snare or guillotine to be slipped in place on the loosened gland without releasing the grip of the locked forceps.

Among other instruments deserving mention, is the Sluder modification of the old-fashioned MacKenzie tonsillotome. It is now widely used and is regarded by many as a happy solution of the problem,—giving a more thorough effect than the old instruments and being easier for the unskilled operator than the dissection and enucleation done with other instruments. It permits more rapid work and the operator can do with less assistance, but hemorrhage is in the long run more likely to follow than in the use of the snare, which has also the advantage that no other instrument can be so nicely adjusted to the loosened mass. Healing is perhaps a little slower with the snare operation.

The fact is any method of removal for which the operator develops a liking will give the most satisfactory results for him, it being less a matter of instruments than of educated hands and good judgment.

In addition to the usual steps in preparing these patients for operation I like to give them calcium chlorid and lactate for a few days before operating. I am convinced this has a very distinct effect in lessening the danger of hemorrhage.

1125 Boston Road.

Medical Reserve Corps Dinner.

The New York Division of the Medical Reserve Corps, United States Army, gave a dinner in honor of Surgeon General William C. Gorgas at the Hotel McAlpin, New York, February 6th. Nearly one hundred members of the organization were present. The attendance included about twenty regular medical officers stationed in and about New York.

Dr. Reynold Webb Wilcox presided, and the speakers were General Gorgas, Colonel L. M. Maus, chief surgeon of the Eastern Department; Colonel Charles Richard, president of the Army War College, Washington; Dr. John A. Wyeth, president of the New York Polyclinic, and Drs. George Henry Fox and W. M. Brickner.

The organization of the Medical Reserve Corps is in a very healthy condition, and it holds monthly meetings in the 12th Regiment Armory, where the members receive instruction in the duties of the medical officer.

The zinc oxide ointment and the injections should be used daily, whereas the iodized glycerin applications should be made only every two or three days.—*Gazette Médicale belge.*

WAR AS A HOME-MAKER.

WILLIAM LEE HOWARD, M.D.

AUTHOR OF PLAIN FACTS ON SEX HYGIENE; FACTS FOR THE MARRIED; WORRY AND SEX; ETC., ETC.

Westboro, Mass.

War, war that will rouse the distinctly male attributes in men, has been needed. War is one of the rhythmic conditions in man's progress. That some other form of giving expression to man's inherent pugnacity without weakening his valor and virility may be found, is the hope of all courageous men, but until then the rush and clash of men whose blood has been charged with red corpuscles is needed to strengthen in women those sex qualities necessary for continuance of the race and develop mental and moral qualities.

To paraphrase Scott:

Woe betide the country when
Fear is seen in beardless men.

War is a powerful sex stabilizer. It brings out all the maleness in man, all the femaleness in women. It is temporarily brutalizing and destructive to man-made things, but it brings to women a desire for children, to "mother" men and the normal wish to return to hearth and home.

If war is a home-breaker, it is also a home-maker. We have had many antisocial conditions causing the destruction of homes, but not one social condition of late years has been a real home-maker.

Paradoxical as this may appear at first, the truth of it will be apparent if we study the psychology of sex and the effect of the male fighting spirit upon the functions and psychic forces in the female.

When women attempt to rule and govern it means man has lost his chief male attribute—pugnacity. It means that those sex feelings which stimulate regard for women's interest and her right to be a partner in man's activities, are lessened and inactive. It demonstrates a selfish state and a willingness to accept favors, but not to fight for them. It is really playing the role of female-passiveness, and to all normal women this attitude is disgusting.

Who rules among the herd, the bull elk who, refusing to fight, is deserted by the females, or the fighter who shows his right to have his germ plasm passed on to future generations?

And in answering this question do not forget the fact that when it comes to reproduction and all the psychic details accompanying it, animals and man are governed by the same inexorable laws—the female wants as a father for her children a man who will not pass on to them timidity, effeminancy, selfishness, dependency.

However much a man gathers wealth, the psychologic fact is that normal women love the men who can fight and do fight when necessary. To try to bring them to respect weak men and have children by men of "peace at any price" nature, is to bring weakness to a nation.

Why do women flock to prize fights, why does a carefully nurtured girl run off with a chauffeur, why do so many want freedom when married to a man whose one idea and thought is money?

Because they want doers for mates, not fatty indifferents. They want men of action, of the ideals of knighthood, not those with the natures of a Shylock. Why are the men in martial uniform so universally attractive to women? Not from caprice, from delighting in colors and courtesy, from mere "foolishness," desire for conquest, but from a psychological cause as ineffaceable as the instinct for motherhood and a factor of this complex.

It is because through inherited instincts from savage forebears the soldier represents to their subconscious minds, valor, protection, virility. Only the brave and cautious, only the warrior who dared the chief to obtain one of his young women, came out from his foray alive. He fought for his wife. His sex instinct gave him courage and determination, the only fit attitude for a future father.

These instincts were transmitted to his children. The female descendants hold in their psychological make-up the admiration and respect for the qualities possessed by their warrior ancestors. This is the true reason for the young woman's love of "brass buttons," the fundamental cause for American girls marrying officers in European armies, the eclat, social opportunities, positions and courts being only supplementary conscious reasons.

Woman's admiration for a fighting man has a biologic cause. It is Nature's way of reproducing from the physically fit. No real woman wants to marry a moral or physical weakling; women want men who can fight; that is, Nature has implanted this desire within them, way down, deep into their souls, or subconscious brain, if you will.

Do not misunderstand me. I do not mean that a woman wants a quarrelsome, cowardly individual looking for trouble; that despicable person who has no self-control over his passions and anger, the man without self-power to fight and win victories over himself. I mean that woman must be a part of men or nations which, when it comes to a necessary fight, is ready to fight and can fight with ancestral lust.

This is a sex attribute women must see in men if they are to be complete women, full of women's work. Not having seen these attributes during the last forty years, she has started herself to demonstrate this inherent force in Nature.

But just as quickly as mobilization went on, so quickly did woman's militancy come to a stop. Feminism became quiescent on the Continent and in England, and the woman of mansions and the girl of the streets were brought together to do woman's work.

The war is bringing woman her own. She now has something serious to do; something womanly as manly deeds are coming to the fore, and her interest, sympathy, devotion, love and admiration are aroused.

All these emotions enhance the sexuality of the female, and in the young woman means development of maternal instincts. All emotions have a physiological basis, and the stimulation resulting tends to a normal state of health when these emotions arise from normal attributes.

Here is a little incident, but it means much to the sex psychologist. In the midst of the sermon at St. Paul's, London, on Sunday before war was declared by England, a suffragette arose and shrieked something and another became hysterical; but these two hysterical and irresponsible women were quietly removed with no commotion and without affecting the demeanor of the congregation.

When these two women are working for others' sakes, work for the wounded, for the hospitals, for town and city, there will be latent physiological functions aroused, and those glands which keep the chemical balance of the body and mind, will, through the influence of war duties and emotions, become normally active and the women able to aid man and not antagonize him.

The beneficial influence of the war upon women is already well demonstrated in the sudden change of habits, of thought, and occupation throughout Europe, and will, reflectively, have its good effect upon the many misdirected energies of American women. The thousands of women who have been restless and turned to subjects which suppressed their sex feelings will now have things to do and duties to perform which will bring to the surface all their femaleness and maternal instincts.

The maternal instinct is protean in its manifestations. War offers a vast extension of the field of application of these instincts. Tender emotions and their protective impulses will ripen to fullness. Sight of the wounded on the field, in the hospital, in homes; cries of those in pain, the knowledge of big duties, associative ideas of her responsibilities to the suffering, her intuition of the obvious incapacity of the wounded soldier to supply his own needs, are psychological factors in all normal women; innate, rooted in their ancestral soil—the maternal instinct.

These normal emotional states are necessary to keep the psychic and physiologic balance in women. Lacking these, they become hystericals, neurasthenics, waverers. In trying to supply a substitute for normal stimulating causes for their emotions, women turn to politics, polemics and publicity—the Trinity of the embryonic third sex.

These masculine traits becoming dominant, the determinance of sex are submerged by perversity, physiological stagnation and a twisted view of biologic facts. Rampant Feminism is not founded upon femaleness—it is a negative state, a form of psychic eunuchism.

These impulses of modern women must not be confused with the rightful desire of women to have a share in those matters in which they are seriously concerned —clean cities, clean men, clean living.

The emotions aroused by war has the same effect upon women as the cries of a child. These emotions merge, after the war, into desire for child. In the engaged girl it is desire for child while the father is at war. Hence the many hurried marriages which have taken place. It is a kind of vicarious sacrifice should the father be killed, a somewhat satisfying period of waiting for his possible return. Moreover, it gives her the knowledge of having a son or daughter by a valiant man. In those who wait for the return of men to marry them there is constantly kept alive the longing for child. In this fact lies the reason for the increase of birth rates after wars. From desultory investigations we have the right to believe that the proportion of males to females born after a big war is about three to two.

Now it is well known to those who are in positions to observe and learn that much of the decline in birth rates is deliberately caused. Women have become disgusted with the increase of parasitical men, of the lack of moral stamina in husbands, of the absence of marital honor; and take measures not to increase the stock. Women have lacked those conditions which cause the desire for motherhood—opportunities to pity, care for and sooth. Chagrin, shame, disgust and disappointment are what many of them have had to meet.

War will bring real men to pity, admire, to care for, to sooth; which means that women will cease deliberate avoidance of motherhood, so intimately are their psychologic and physiologic functions related, or rather interrelated.

A good woman must mother something. In war she mothers in some way or manner, directly or indirectly, man; brother, cousin, lover, friend, stranger. And, as I have said, when this is done there remains, strong in desire, the wish to mother a child. And have not the thinking men and women of the civilized world been asking the question, "How can we bring about in women of culture and morals, a recrudescence of motherhood?"

Most of you will exclaim, "Not by the horrors of war! God forbid! Better have no babies born if war is the only remedy."

True, superficially thinking. But get at the root of the important matter; see way down into the subject. Is there not some fundamental cause beyond man's power to correct in these rhythmic killings following periodic deviations from basic instincts and the invariable return to biologic laws? And what is of far greater import, man getting higher and higher in understanding after each apparent retrogression, but which, in fact, has always been progression.

Look into the veridical histories of the world—not the books of our "school marms" or village libraries—and you will find that big wars generally followed when men became timid or effeminate, women masculine. Such a nation surrounded by those still retaining the more primitive but really normal sex relations, will, through the inherent instinct of men, become a teasing temptation for conquest.

Indirectly and subjectively through decline of male sex honor, women have been the cause of wars. After war the vanquished take up the normal sex life.

I do not purpose to go into the stock argument that war kills off the best men and leaves only weak ones to reproduce their kind. This statement is only partially true, and avoids the psychologic and material fact that war makes a strong man out of a weakling.

This does not apply simply to physical strength, but to moral strength. Many, most, so-called weaklings, incapables, are so through lack of discipline and proper environment, parental neglect and parental irresponsibility. Those physically too weak to be taken as soldiers in such a war as is now being waged, will have no temptations to offer a normal girl or any worth-while woman.

It is the returned fighter who wins the woman of worth. Then, again, the loss of good men in war is compensated by the living men who have been made into fit men through suffering, *discipline* and ambition. Thousands will be remade through the administrations and care of devoted and sympathizing women.

Here is one example of the good influence in England the war will have—there is a very large class of heretofor useless and dangerous young men known as "slackers." These are the loafers who hang around the parks and other public places. There is literally an army of them. They hate work, are foes of ordinary discipline and have just that amount of injurious education which is not unknown in this country. Thousands of these men have been persuaded to enlist. Thousands of women are on their trails. One nurse in Liverpool rounded up twenty in one day. There was talk of conscripting these loafers, but the influence of women and girls has done the work.

Irish lassies are urging Englishmen to rally to the colors, while English girls on horseback are going through the country getting the oafs and cricket players to enlist. The English women of all classes have just announced they will stay away from all football games until the number of men needed for the army is obtained. Certainly the next monument to be erected in London should be: "The War-Spirit-Woman."

It is said among the London clubs that Lord Roberts stated that without the women and girls the country would have had to conscript from the start.

Will these formerly useless young men make good fighters? The best England could find outside of the upper classes. It is what they were born for. The English policeman has held them in high respect, for in many ways they have shown that fighting was their one good trait. They are the same sort of men which made up Nelson's ferocious fighters. These you will remember were the press gangs.

Now there is always some dominating trait or character of value in every youth and man. Our topsy-turvy educational conditions, and idea that every youth and boy could be drilled by a woman school teacher to love ethics and cultural studies in place of his inherent instinct to fight or be physically active, has produced a class of gangsters and helpless youths who will not labor, who are not amenable to ordinary discipline, and, having no normal outlet for their natural propensities, become troublesome citizens.

If we do not need an army to keep foreign foes out of the country we should have one to discipline and keep under control those already here. The claim that neither the army nor the navy wants the gangster and his ilk is a good idea from the officer's point of view, but it would be worth the trouble to round up these youths with the fighting spirit and make or break them. It would be the salvation of most of them. It is the one way to prevent the increase of this mass of dangerous young citizens, and one or two campaigns would accomplish what no other method will.

The present colossal war will be the greatest school for personal hygiene the world has ever known since Moses kept his men and women clean through laws you should read and understand.

The two great curses of mankind, venereal diseases and alcoholism, are now to get the greatest licking they ever have had. What the church has failed to do, what all the moralizing and legislating has been unable to accomplish, is now about to be accomplished by the present war.

Science now has a cure for syphilis as well as prophylactic methods for venereal diseases. The great difficulty—an unsurmountable difficulty—in putting a stop to the increase of venereal diseases, has been the inability to get the mass of young men together under such control that they must heed and obey.

The handful of soldiers and the two handfuls of sailors in our service are becoming clean, moral and healthy men; fit men for husbands and fathers. But this is about as far as we have been able to go with our millions of young men who need the control, instruction and severe discipline.

There is no tolerance or permission in the matter of alcoholic indulgence by the army officers in Europe today. Swift punishment meets the soldier who abuses his health by venery or alcohol. A soldier found drunk on important duty is summarily shot. Also, the rapidity, the constant moving of troops, the continued battling, leave no opportunity for those former encampments of weeks where the soldier had chances to dissipate. Furthermore, the men are well instructed in the subjects of sex hygiene, the injury venery does to valor and stamina, and the impossibility of winning commissions if debauched or diseased.

That curse of Russia, alcohol, is to disappear. The Czar has forbidden forever the manufacture or distillation of alcoholic preparations. A correspondent who was talking with an officer reports: "I asked him whether he wanted a bottle of wine. We don't use a single drop of alcohol during the war. It is strictly forbidden," he said.

Crime in London has been reduced to a neglible quantity. Robert Wallace, the chairman of the Grand Jury of London, said the other day: "That the calendar was the lightest in the history of the city and county."

In Berlin the authorities have taken a firm grasp upon the question of prostitution. Many houses have been

closed by the police, and those restaurants and cafes where girls and women were wont to ply their profession have been boarded up. No women are allowed near the camps or in the neighborhood of military prisons. In fact, the war has offered the first real opportunity to deal with the question of public prostitution.

The women have not been turned out into the streets to starve or to clandestinely spread venereal diseases, but have been taken care of in various decent ways. Many have been given employment in the factories making army clothes and materials, more have been sent into the country to work on the farms, all with due regard and charity toward their physical incapacity and inexperience. All street walkers formerly tolerated and licensed are arrested on sight and sent away to do health-restoring work.

With these new conditions existing in the cities and the discipline and instruction the young men receive in the army, it can scarcely be doubted but what a better moral standard will prevail when peace is finally declared. Many returning young men will marry, having sympathizing women to make homes happy. In fact, the whole state of affairs will be a remarkable change from what formerly existed.

Stern discipline, the evacuation of powerful impulses through battles, forced marches, the constant influence of thousands of good but understanding women on fields and in hospitals, the example of sober officers and the instructions and advice of surgeons, will have a direct effect in making good homes in the future for young women and girls. So the title of my article, War as a Home-Maker, does not sound extravagant.

Now let me ask this one question of those men and women who believe nothing but misery and inhumanity can come out of this war. If this war is a world-school in which young men are forced to avoid alcohol and sexual indulgence and gives a practical working method of reducing prostitution, is it not worth while?

Yes; it means the death of hundreds of thousands of men and leaves sorrowing and dependent widows; but not entirely dependent, for the governments will see to them.

But do you really know how many widows are yearly made by that foe to civilization, to society and family, venereal disease, and who not only receive no pension but exist with the fear ever over them that their children will show the baneful inheritance and become criminals, mental invalids, unfits; or if they escape the effects are certain to transmit the awful curse to another generation?

You don't know? Well, I'll tell you—LITERALLY HUNDREDS OF THOUSANDS EVERY YEAR.

If the discipline and instruction in this war makes for the future health of mothers and children, if it gives men the sense and meaning of women's need for work and human interest, do you want it to stop at once? Will not the benefits to the future generations be far beyond any misery and distress that will be the lot of the present generation?

Deaths from Cancer Increasing.

There has been an almost continuous increase from year to year since 1900 in the death rates from cancer, organic heart diseases and endocarditis, nephritis, and Bright's disease. The most marked increase for any one of the most important 12 causes of death was that in the rate for cancer, which rose from 63 per 100,000 population in 1900 to 78.9 in 1913, and in only two cases did the rate for any year between 1900 and 1913 show a decrease as compared with the preceding year.

DEAFNESS vs. STUPIDITY.

HAROLD HAYS, M.D., F.A.C.S.,
New York.

A short time ago a mother brought her daughter to my office, saying that the child had been sent home from school repeatedly with notes from the teacher, saying that if she did not do better she would have to be put in the backward class. The girl did not seem to be attentive, and often looked at one with that stupid expression which bespeaks the border line of imbecility. The first thing that suggested itself to the mother was that her daughter was possibly suffering from some form of cretinism. She looked bright enough usually, but there was that wondering, inunderstandable expression which showed that some of the mental faculties were not properly alert.

Physical examination was negative. There was a history of repeated colds. An examination of the throat revealed an enlarged mass of thick tenacious mucous hanging from the nasopharynx. The test with a watch up to either ear showed that the child could not hear the watch even on contact with the ear. Careful examination revealed the fact that both canals were filled with wax. This was washed out with an alkaline solution, whereupon the watch could be heard at a distance of at least six inches. There was a slight retraction of both drums, due no doubt to a stenosis of the eustachian tubes with the accompanying rarefaction of air in the middle ear.

Treatment for this condition was instituted, and at the end of a few weeks the child lost its vacant expression. The face became bright and the reports from school were most encouraging. With the proper attention this child will now be considered normal as far as mentality is concerned, but her ears must be examined frequently, and unless one wishes to have her join the class of patients suffering from progressive deafness she should continually be under observation.

This case is by no means a special one, and the stupidity which characterizes a number of children can frequently be overcome if proper measures are taken to discover the child's trouble. Nothing is more unfortunate than seeing such a little one suffering at the hands of her teachers, or parents, or playmates. This is particularly so if one realizes that unless such a condition results from an acute infection it can frequently be overcome. Such seeming stupidity is frequently changed by removal of adenoids, but whether such removal simply increases the child's general health or increases the acuity of hearing is hard to say.

We have a school for the deaf in New York City connected with the public school system which takes care of children from all parts of the city who are hard of hearing. Many of these pupils were considered not only backward, but hopelessly stupid, while they were made to learn their lessons with hearing children. Are these children stupid to-day? In order to prove that they are just as acute and happy as the average child one has only to visit this institution and see for himself that the children are mentally just as proficient for their age when they are taught in the proper way as the average child.

The deaf child should have special training. He should have special attention given him at home. He must be taught to know and to speak. More important than this, however, is the examination of all children who seem at all mentally deficient in order to discover whether their inability to hear sounds is not at the root of the trouble.

11 West 81st Street.

STERILIZATION; THE LATEST SUGGESTED REMEDY FOR "SOCIAL INADEQUACY."

CHARLES A. BOSTON, Esq.
OF THE NEW YORK BAR,
New York.

'Tis the star-spangled banner! Oh, long may it wave
O'er the land of the free and the home of the brave!

Thus in my native city of Baltimore, wrote Francis Scott Key, in the year 1814, and it still waves according to his wish, but one may well pause and ask himself whether this is still the land of the free or the home of the brave.

When Key's words are sung, the highest note coincides with the word *free;* and for a long time that emphasis was typical of the spirit of personal independence which characterized the American colonies, which led to the Declaration of Independence, and which marked the Bills of Rights, in the first amendments of the Federal Constitution, and in the Constitutions of the several States. A tax imposed under pretense of fairness and for the professed good of the mother country, but without the consent of the colonists, was the match that started the American Revolution. When the Declaration of Independence came it voiced out of that decent respect for the opinions of mankind, which it professed that

"We hold these truths to be self-evident, that all men are created equal, that they are endowed by their Creator with certain inalienable rights, that among these are life, liberty and the pursuit of happiness. That to secure these rights, governments are instituted among men, deriving their just powers from the consent of the governed."

We should bear in mind that the fundamental principle of the government which has been successfully carried on here since 1789 and for some time before in many of the colonies, was the great value of the individual liberty of the citizen.

But to-day, I shall hold up to the test of this criterion, the present-day advocacy of sterilization under the demand and form of law, as a "practical means of cutting off the defective germplasm in the American population." And when I use this phrase I quote from the report of a committee of distinguished men published in *Bulletin* No. 10A of the Eugenics Record office at Cold Spring Harbor, New York.

I speak from the standpoint of those who feel that the day has not yet arrived when under the guise of the exercise of the police power or otherwise, the constitutional guarantees which are the foundation of the stability and the hope of our form of government are to be frittered away, in the fancied interest of the American people. Who and why, are the *American* people? When "We, the people of the United States, in order to form a more perfect Union, establish justice, insure domestic tranquallity, provide for the common defence, promote the general welfare, and secure the blessings of liberty to ourselves and our posterity," did ordain and establish this Constitution of the United States of America, they numbered 3,929,214 (census 1790). By the census of 1910 they numbered 93,402,151 or exclusive of outlying possessions 91,972,266, an increase of about 90,000,000 or 2250%. At each census since 1860 the percentage of *foreign* born in the population has been practically steady between 13.2% and 14.7%, while native whites of *foreign* parentage have increased from 15.9% in 1870 to 23.1% in 1910. In 1910 the foreign born and natives of foreign parentage constituted substantially 37.8% of the entire white population. In other words the "*American* population" to-day is 37.8% not more than one remove from the old world. Out of 91,972,266, and after 125 years of government under the constitution at least 32,413,723 are either foreign born or have one or both parents foreign born.

But the theory is now advanced that, forsooth, it is necessary to go in search of the best practical means of cutting off the Defective Germ Plasm in the *American* Population, and several distinguished men have united in a voluntary committee to that end, whose first report has been published under date, February, 1914, by the Eugenics Record office at Cold Spring Harbor.

Far be it from me to discourage any statistical work of this praiseworthy enterprise or any conclusions which may be properly deduced therefrom. But I do desire to call attention to the grave danger that hastily drawn conclusions may lead to the introduction and passage of ill-advised legislation, based upon insufficient data or erroneous deductions; and that such legislation may be one more nail in the coffin of those constitutional safeguards which have been the political cause of the prosperity of this country as the haven of the oppressed of all nations.

I speak, not as a professional man, but as an American citizen and one who wants to know, and furthermore, wants to be pretty well assured that some substantial good will come to the body politic, before he can look with complaisance upon the undermining even in this particular of the fundamental safeguards which have thus far accompanied our growth as a people.

The report, which I shall now consider at some length, further asserts that eugenics if neglected would cause racial, and consequently social degeneration; it asserts that as an art eugenics is as old as mankind; as a science it is just now taking definite form. This prompts me to inquire if mankind has practiced the art hitherto from its creation, why seek to enact the science into law, until its definite form is a little more firmly established? and why not so far as legal enactment is concerned stick to the mere art for a while with a little "watchful waiting?"

This report points out that Dr. C. B. Davenport has listed in his trait book 2,500 human characteristics, mental and physical, normal and pathological, defective and sterling, and says "A given individual is a fortuitous mosaic of the unit traits of his ancestors."

And this prompts me to inquire, which ancestors? Only the defective or socially inadequate, or all? And if all, who is to know which or how many offspring will develop the defective traits and how defective will they be? Will they be merely individually unfortunate, or will they also be socially inadequate, and in what proportion? and if the proportions are in favor of the socially adequate, must these socially adequate be suppressed in order to suppress the socially inadequate?

The report characterizes the task thus:

"Its task, therefore, is vastly less difficult than that which confronts the student of constructive agencies, for, if a person possesses hereditary traits which render that particular individual unable to cope with his social environment, such person's line of descent should be cut off—a relatively simple process."

Here we begin to strike the radical tendencies of the report and its recommendations, for though there can be tabulated 2,500 human characteristics, and any individual is a *fortuitous* mosaic of the unit traits of his ancestors, and each ancestor has 2,500 traits and there are more than 1,000,000 ancestors in the 12th generation, still if the particular individual chances out of all the infinite possibilities of this mosaic, to have fallen upon hereditary traits which render him unable to cope with

*An address delivered before the American Association of Medical Jurisprudence at its annual meeting of 1914.

his social environment, his line of descent is to be cut off.

But who can say that *his* social environment was not extraordinarily harsh, and who can say, that social environment is eternal and unchanging, or that the social environment of to-morrow will not require the qualities which are cut off as undesirable to-day, or that continual cutting off of those unable to cope with their social environment will not both deplete the human race and promote the hardships of the social environment of the next generation? What is it to be unable to cope with one's social environment?

The report attempts to designate the socially inadequate in the American population to-day and enumerates them as feeble minded, pauper, inebriate, criminalistic, insane, asthenic (physically weak), diathetic (predisposed to specific ailment or undesirable condition), deformed and cacaesthetic (those having defective organs of special sense). In all of these the report seems to recognize transmissible qualities, while it also recognizes the possibility of accidental (not inherited) assignment to one of these classes.

The chapter devoted to remedies suggests four remedies, segregation for life or during the reproductive period, sterilization, restrictive marriage laws and customs, and eugenical education of the public and of prospective marriage mates. Of these four remedies, no one could seriously object to eugenical education, if true; but the other three remedies demand careful scrutiny, and invite a serious challenge. Upon what knowledge and whose, are we to segregate, sterilize and restrict? Are we to rush off after ill informed enthusiasts and imprison, cut and restrict? Or are we, and should we firmly insist upon it, to wait and see and go slow, and not destroy our social or political fabric until we know, and not deprive the humblest or the most friendless individual of his present legal rights, until we are convinced, or even then?

Upon the subject of sterilization the report says, "Sterilization is advocated only as supporting the more important feature of segregation when the latter agency fails to function eugenically," which I interpret to mean, sterilization should only be resorted to when segregation cannot be effectually enforced.

It is not my purpose to distort the report nor to minimize its recommendation of education along eugenical lines. Its theory is expressed as follows:

"With intelligent people, then, eugenical marriage appears to be largely a matter of education. In individual cases, wherein this remedy fails, segregation or sterilization should be resorted to as a supporting measure. It may be fitting again to call attention to the eugenic value of the policy of resorting to segregation or sterilization in all cacogenic cases wherein it is apparent that preventive agencies have failed or will fail. If sterilization is opposed, let its opponents bestir themselves and make efficacious other remedies."

Well, to assume the defensive! First! It appears from the report that the latest census shows .914 per cent. (less than 1% of the population) or 841,244 persons inmates of institutions for the anti-social and the unfortunate classes in the United States; that is to say, after this supposed virus of hereditary defect has been operating unmolested through all the ages of human existence, and after the human race has during the same period been engaged almost without interruption in killing off its fit and strong in ferocious battle, now that peace in these United States has a slight opportunity through the relative unwarlikeness of the weakened survivors, some 91,131,022 persons are still not in custodial care; that is to say, are still not so anti-social or so unfortunate as necessarily to call for deprivation of personal liberty, either for their own good or the good of the community. One might be tempted to suggest in the face of these figures that the ancestors of these 841,244 having been permitted to prey on mankind unmolested and according to their uncontrolled physical instincts during the ages not only since recorded time, but prior, the very fact that they are now segregated and therefore to a certain extent less capable of propagating than before, makes the present race less dangerous than ever in human history, for confessedly the number in custody has increased from .5904% in 1890 to .9147% in 1910, about 60%.

My interpretation is that we are looking after the custodiable with greater vigilance as our wealth and general intelligence increase. Changes of environment, removal from the country, the pressure of urban existence, the increase in density of population, all new problems, may and probably do produce effects upon weak individuals which account for the custodial increase, but this goes nowhere to demonstrate that their yielding to circumstance is evidence of transmissible defect.

In summarizing its conclusions the report says:

"It is the duty of human society to grasp every possible means for its amelioration, and, if it finds in the segregation and sterilization of defectives a means for improving the innate qualities of future generations without inflicting a present moral wound, it is the duty of society even at great cost and effort to bestir itself in applying such remedy."

It is this proposition which I am not prepared to admit. It loses sight of all political philosophy and of all of the results of observation of the consequence of society's efforts to do violence to the weak in assumed suppression of social inadequacy. It also closes its eyes to the normal births from defective parentage, and treats it as essentially beneficial to society to eliminate defective births, though by so doing it suppresses a greater number of normal births; it seems to ignore the lessons from its own illustrations that the number of normal births from the average mating of abnormal with normal people exceeds the abnormal births and that the chance of excessive normal matings, where the free population is considerably more than 99% of the whole and the custodial population is deprived in a larger measure of the freedom to mate.

These reflections suggest the question whether the hereditability of defective traits can not be ignored by human society so far as its suppression necessitates violence, in the consciousness that education in eugenics will discourage a larger proportion of present unfit matings, and that in a society where the fit so enormously outnumber the unfit the normal tendency is toward the natural elimination of defects; and whether in studying individual cases which are undeniably unfortunate to the particular family and individual we do not overlook the normalizing influences and thus misjudge the duty of human society.

The report continues:

"To epitomize, of the several remedies reviewed segregation and sterilization are the ones deemed by this committee to be most feasible and effective in cutting off from the human population the supply of defectives."

I ask if this does not ignore the natural influence of mating with the normal, and whether it is not that, which, with all of our charitable impulses, still explains why we have less than 1% of the population in custody for all causes.

The ambitious aspects of the Committee's programme are indicated by the following quotation:

"That the segregation program be supported by a sterilization program as follows: That during the period while under State custody every inmate (except those committed for life) of an institution maintained in whole or in part by the public funds be examined as to innate personal traits and family pedigree,

and that all such inmates found to be potential parents with undesirable hereditary potentialities and not likely to be governed by the highest moral purpose shall be humanely sterilized prior to release from their respective custodians. Such a supplementary sterilization program will call for surgical sterilization of inmates prior to their release from institutions as follows: Beginning with approximately 80 persons per year per 100,000 total population in 1915 and increasing to approximately 150 persons per year per 100,000 total population in 1980."

This suggestion would mean for our present population on the basis of 150 persons per 100,000, 13,650 operations per year in 1980 notwithstanding the very large number of operations during the preceding 65 years—a total, as I figure, of 7,006,900 operations in 66 years, and yet without allowing for any increase of population, during the period; if the population should increase the operations would correspondingly increase.

The report also says:

"Continuous decimal elimination should become a part of the eugenics creed of civilized people."

It would seem that emanating from such undoubtedly sincere and noble minded persons as the members of this Committee, such a comprehensive programme must be based upon an indubitable foundation of fact. Yet if there is any institution in this country which is yet equipped to furnish the facts that call for the continuous decimal elimination of the population it would seem to be the Eugenics Record office, young as it is. But I note that its report No. 1 bears date June, 1913, and in that report dated just six months before the report of the committee which I have thus considered at length, I find the following, which appears to be a refutation for the present at least of the ambitious plan submitted to the American people, of gradually sterilizing 7,000,000 of the population in two-thirds of the century (assuming no rate of increase of population):

"Not until a knowledge of the manner of the inheritance of specific human traits is obtained can man undertake intelligently to devise plans for cutting off the supply of defectives and for so modifying the social scheme that intelligent matings will bring together harmonious hereditary strains. It is the appreciation of these facts that makes research the pressing business of eugenics."

I take this to imply that eugenics as a research agency is not yet ready to go out of business; and yet it would then follow from the premise that man can not now intelligently devise plans for cutting off the supply of defectives. The report of the office appears to have been penned by the same hand as the report of the committee.

The committee has published valuable analyses of existing sterilization laws in 1912 and 1913; it is surprising to find that while eight States had already adopted such laws in 1912, this number had increased to twelve in 1913.

From the analyses furnished by the committee it appears that except in Washington and Nevada where the legislation is characterized as purely punitive, the legislatures of ten States have already put the liberty of the helpless in the community into the control of a State board for mutilation, in many instances as the board may elect, while the eugenic advantages of such operations are utterly disregarded in Connecticut, Iowa, New York, Michigan and Kansas, by penalizing similar operations on undesirables outside of State institutions.

Is it not certain that reporters, editors, physicians, ministers, social workers, public lecturers or some of them have disregarded the injunction from the Eugenics Record office and have assumed that eugenics is a scheme for the immediate regeneration of mankind?

In view of the fact that selected cases, chosen in the Bulletin for the purpose of illustration, show a majority of normal progeny, what is such legislation but the commitment of the helpless to the ruthless butchery of a special board with no certain or even probable data upon which to presage the future. How does it differ substantially from the persecution of the witches under the leadership of the Revd. Cotton Mather? Are we not in fact passing through a new period of witch persecution, in which the rights of the individual are lost to sight, and is not the net total, merely a weakening of our ideals of personal liberty, which hitherto have proven the solid foundations of our political life? When we turn over all of the inmates of our State institutions to the absolute domination and will of the boards which control them, to do with them as they see fit, and upon their views of desirability, who is to say that we have not inaugurated a policy which diminishes our respect for the personal rights of the weak, helpless and unfortunate, without any corresponding benefit whatsoever to our body politic, or our people?

All history is full of the pathetic stories of individuals, apostles of light perhaps, who, running counter to the prevailing sentiment or power of their day, were deemed "socially inadequate." Many of them left no progeny; many if not most of our political heroes in great crises, were amenable to, or suffered, imprisonment. Under any of these laws they would in case of confinement, be subject to additional persecution of asexualization at the will of one of these boards. Is such a game worth the candle? Is it not undermining all of our safeguards for a mere fancied good, which makes no substantial imprint upon public welfare, except its weakening influence upon our political ideals?

In four States—Pennsylvania, Oregon, Vermont and Nebraska—such legislation has been vetoed by the Governors. In Oregon, a statute subsequently passed and approved was revoked by referendum of the people. The loose character of such legislation is brought to the front by the grounds of some of these vetoes; for instance, in Pennsylvania, that the nature of the operation was not defined and it might permit decapitation, that at all events, it might lead to peritonitis, blood poisoning, lock-jaw and death; In Oregon that it is liable to permit a terrible abuse of power by the authorities; in Vermont that the machinery was inadequate, unjust and insufficient, that there is no provision for any apeal from the decision of a board; in Nebraska, that an act so far reaching and intimately related to the social life of mankind should not be thoughtlessly or hurriedly drawn, that it is an experiment more in keeping with paganism than Christianity; there were other objections in some of the vetoes that such legislation is unconstitutional.

The New Jersey statute, in so far as it refers to epileptics has already been held to violate the Constitution of the United States in depriving the patient of the equal protection of the laws. In the particular case it was pointed out that the proposed operation for the removal of the Fallopian tubes subjected the patient, a woman, to a double capital operation with the dangers of profound and prolonged anaesthesia and the dangers from anaesthesia, shock and infection, made more dangerous in the fact that it was to be performed by force and against her will; the order under the law made it lawful for any registered surgeon to perform the operation and the patient had had no attack of epilepsy in five years. It was sought to justify the legislation under the police power, the opinion of Justice Garrison in the Supreme Court said:

"The general limitation of such power to which the prosecutrix must appeal is that under our system of government the artificial enactment of the public welfare by the forcible suppression of the constitutional rights of the individual is inadmissible." * * *

and again

"The feeble-minded and epileptics are not the only persons in the community whose elimination as undesirable citizens would, or might in the judgment of the legislature, be a distinct benefit to society. If the enforced sterility of this class be a legitimate exercise of governmental power, a wide field of legislative activity and duty is thrown open to which it would be difficult to assign a legal limit."

It is to be noted that this decision based the unconstitutionality of the law on a provision of the United States Constitution, which, insofar as the other State laws fall within its condemnation for a similar reason would apply to all alike. In the particular case the unconstitutional discrimination consisted in hedging around with all the protection of personal liberty epileptics not confined in State institutions, while sterilizing those so confined, and that this basis of classification bears no reasonable relation to the proposed scheme for the artificial betterment of society. It is reported that this case is to be appealed to the Court of Errors and Appeals of New Jersey.

The committee of which I have already spoken advocates the immediate amendment of the law so as to make it constitutional, by applying it to the entire population instead of to those confined in State institutions, if the present decision should be ultimately sustained; in other words, that at all events, and at whatever sacrifice of political ideals, the one paramount consideration should be the fancied regeneration of society by surgery.

I pause to ask, what but the unquestionable benefit of society should demand the weakening of our respect for the political ideals which have thus far cemented our national existence? and what guaranty have we yet that there is any real social demand or need for such measures? Do not their opportunity for the display of cruelty and gross ignorance, and favoritism, rob them of all superior advantages?

The committee says:

"It would, indeed, be folly for the people of a State to enact a sterilization law if they did not believe firmly that certain determinable human defects, causing personal misery, and antisocial conduct, are hereditary and incurable in nature, and that by studying the innate traits of the kin of individuals possessing such traits men of science would be able to determine the nature of such individual's hereditary qualities in reference to the specific traits studied. In reference to this aspect let it be said that heredity in many human traits is demonstrated, and the people are beginning to find out the truth concerning the human stock. Practical application of eugenical agencies is now a matter of method rather than principle."

I ask whether in the persecution of witches the people did not firmly believe in their diabolical affiliations?

In conclusion, I wish to say that for the observational or investigating activities of these agencies I have but the highest praise; that for their educational propaganda, when they have any facts to communicate, I have the greatest sympathy; but with the image of the Rev. Cotton Mather and the witches before my mind, and the futile efforts in the days of Henry VIII to suppress the vagabondage of those who were deemed socially inadequate (because though well equipped for retainers and men-at-arms during the wars of the Roses, the laws no longer afforded or permitted them any occupation, for the lands were closed to them by vicious legislation). I do solemnly protest against that emotional and unreflective haste which would ruthlessly set aside all experience in chasing another legislative will-o'-the-wisp!

The programme which this committee contemplates is indicated by the following quotation from its Bulletin 10-B:

"The assumed ten per cent., or, to use a current expression, 'the submerged tenth,' appears for the purpose of this study to be a fair estimate of the extent of the body of degeneracy which the American people can now, in the interests of social betterment, well seek to cut off."

In short, the committee frankly seeks to make one-tenth of the population the target for the other nine-tenths in the absolute curtailment of their right or privilege to have offspring; or if the programme were now carried out, at the behest of a majority of the people or their representatives, nine million people would be promptly put forcibly and against their will, but under the forms of law, out of the category of parenthood. It is inconceivable that so many would willingly submit to this indignity and deprivation; if they did, it would subvert the ideas of equality before the law which gave birth to our government; if they did not it would most assuredly subvert the government itself. Nine million people in a democracy cannot be ruthlessly mutilated under the forms of law; they would not stand it. Such an extensive programme, though logically deducible from the premises, is most assuredly an idle dream; but if true it presages the end of a government of the people, by the people and for the people; government must first become an engine for carrying forward the propaganda of an oligarchy of enthusiasts. Figures do not, however, either startle or deter these prophets, for they say, always consistent with their theory:

"If the work should be begun during the present decade, it would in accordance with conservative estimates of future population, require the sterilization of approximately fifteen million (15,000,000) persons during this interval." (i. e., two generations.) "At the end of the time we would have cut off the inheritance of the present 'submerged tenth' and would begin the second period of still more eugenically effective decimal elimination. The infinite tangle of germ plasm continually making new combinations will make such a policy of decimal elimination perpetually of value."

But enough of this. I pause to reflect. I recall the perfect system which is said to have prevailed in Sparta several centuries before Christ, in the interest of the state, but not of its individual citizens; and I fancy no such complete subjection of the individual has ever since prevailed; but Sparta's system paled in comparison, in every beneficent respect, with the free democracy of Athens. We look not to Sparta as our ideal, with all of her physical development for military purposes, but to Athens with her all round development of body and mind, which has ever remained a marvel to all succeeding generations and civilizations. Yet it is Spartan subjection which the committee demands for the fancied good of society; and only in a Spartan society can it exist; one bent on a single and narrow ideal, which loses sight altogether of personal freedom, but would make hideous examples ever of the lowest tenth of the population.

And I turn from these reflections and survey a line of books at my right hand—Plato's Republic, Plutarch's account of Lycurgus' Ideal Commonwealth, More's Utopia, Bacon's New Atlantis, Filmer's Patriarcha, Campanella's Civitas Solis, Hall's Mundus Alter et Idem, Hobbes' Leviathan, Machiavelli's Prince—all indicating what, according to the individual view, an ideal government ought to be, none realized! And I can but picture the scheme of this committee falling into this category, for I cannot conceive that the American people, whether individually they have defective germ plasm or not, will so long as they remain a free people tolerate beneficent decimation by sterilization. It is indifference to the sufferings of a few which tolerates the laws now on the statute books of twelve States, but I cannot conceive that they will ever submit to a law of a character which the committee truly say is the only kind of a law that will produce appreciable results upon the population.

A MICRO-PHOTOGRAPHIC STUDY OF THE TUBERCLE BACILLUS.

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There is here shown for general inspection, study and the analysis of many minds, photographs of human tubercle bacilli in different fields which were prepared and taken in conjunction with Capt. Arthur C. Christie, radiographer, U. S. Army Medical Corps, to whom I stand much indebted for preparatory instructions given me in the art of photography.

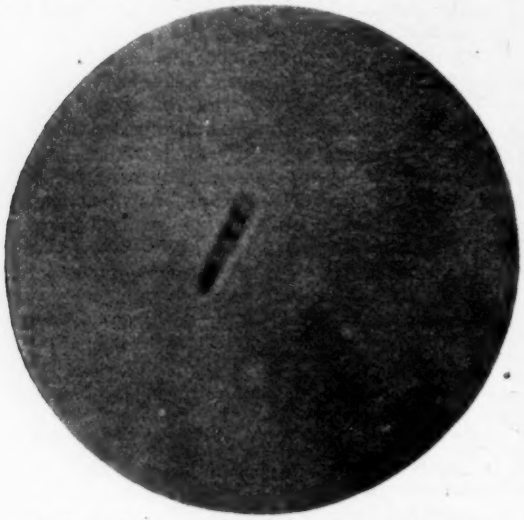

Fig. I.—Single Human Tubercle Bacillus (pure culture).
NOTE: The spherical bodies shown on lower part of plate are oil globules.
Diameters enlarged, approximately 4,000; stain carbolfuchsin and counter stain; objective, 1-16 inch, E. Leitz, apochromat, N. A. 1.30; ocular, Zeiss projection No. 2; Illuminant, electric arc, taking 30 amperes, E. Leitz pattern; condensers, Zeiss No. 1 and auxiliary condenser No. 11; water filter, Zeiss; plate, orthonon, 6½x8½ (surface size of cut reduced); exposure, 1 second; screen filter yellow and eosin; development, pyro-soda; microscope and camera, Carl. Zeiss.

Many thoughts will doubtless arise within the mind of the observer as to whether if, after all, the bacillus is not a spore bearing organism, or even permit his mind to assume that possibly the structure is only a collection of preexisting foreign one-cell units of a pathological variety, originally formed or united together within the body of the host. In other words, the cells become attached to each other at the periphery of the cell structure by some inherent chemotaxis under certan physiological conditions.

As a result of this contact an interchange of cell toxins that may vary in chemic composition by an osmotic process takes place, thus producing within the body of man by exosmosis a specific disease, that changes in its clinical symptoms or character according to the number of cells or units so held or united together.

Some strength or evidence submitted as to this statement is given if the observer will note the various shapes assumed by the "rod" which are not always in a straight axis, but which assume in their contact with each other various degrees or angles, and under certain conditions produce the "branch" effect.

The low power objectives have given to this organism as well as all bacilli a "rod-like" appearance owing to the staining of a certain zone of the cell, which gives a pseudo continuity of this pigmentation, producing visually the typical or familiar undifferentiated rod.

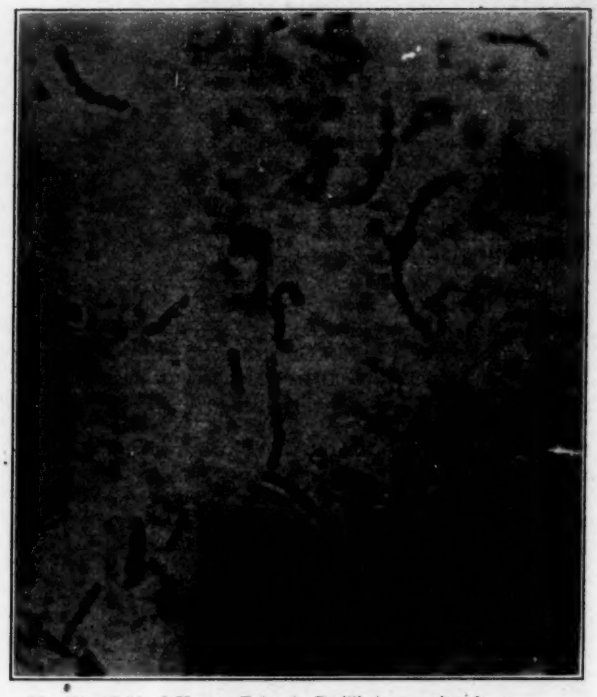

Fig. II.—Field of Human Tubercle Bacilli (pure culture).
Diameters enlarged, approximately 4,000; stain carbolfuchsin and counter stain; objective, 1-16 inch; E. Leitz, apochromat, N. A. 1.30; ocular, Zeiss projection No. 2; Illuminant, electric arc, taking 30 amperes, E. Leitz pattern; condensers, Zeiss No. 1 and auxiliary condenser No. 11; water filter, Zeiss; plate, orthonon, 6½x8½ (surface size of cut reduced); exposure, 2 seconds; screen, filter yellow and eosin; development, pyro-soda; microscope and camera, Carl. Zeiss.

The nebulosity or zone of diffused light to be observed surrounding the picture is either the result of the luminous chemic change of the photo salt molecules or a reflected light emanating from the object itself, presumably the latter, because I have noted in repeated fields of the same micro-organisms upon glass slides, aided by the very high power of a one-thirtieth inch objective and the arc light, the distinct halo shown in the photo.

Further comments on the picture inclines one to remark that the waxy envelope or covering described in many text books as surrounding this particular organism was simply the narrow unstained margins of cells, or possibly this particular zone of light just described, standing out ill-defined under the low power microscopes.

While it was and is possible to enlarge the fields of bacilli photographed heretofore to a size equivalent to one's arm if necessary by even an ordinary lantern projection, yet such magnifications show nothing but a huge blot and lacks entirely any resolvent or initiative detail so essential to the proper study of the organism because of the non-existence of such detail at the onset.

Considerable time and patience was necessary in order to isolate for study the single bacillus shown on the photographic plate and the whole work at times was rather disheartening in its results that any person at all familiar with the operation of a photomicrographic apparatus can well appreciate.

Many pictures were taken. The work here shown and described was largely performed at the close of my daily duties and at night. If possible it will be continued and embrace all known pathogenic organisms from which, let us hope, Truth will merge as the result of observaton and many minds.

UNDESCENDED TESTICLE:
Appendicitis in Childhood; Imperforate Anus.

From the Surgical Clinic of
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Undescended Testicle.

History: Patient, male, ten years old, enters the hospital because of undescended testicle. The parents have noticed that there has always been an absence of one of the testicles in the scrotum, and also that there is a small swelling in the right groin which the patient complains is sometimes painful. Examination shows that there is but a single testicle in the scrotum; in the right inguinal region is a small tumor just near the external ring, and this tumor is painful on pressure.

Diagnosis: There is a word of caution to be said regarding these cases of undescended testicle: *Do not mistake retracted testicle for undescended testicle.*.

It will be recalled that in childhood the inguinal canal is patent and the cremasteric reflex strong; it is not unusual for one or both testicles to be drawn up temporarily by the cremaster muscles into the inguinal canal and thus simulate undescended testicle. It has happaned that a surgeon prepared to operate for undescended testicle finds, after anesthesia is established, both testicles in the scrotum.

Remember, that retracted testicle is temporary, retained testicle is permanent. Hence absence of testicle in scrotum is to be considered symptomatic of undescended testicle only with the above reservation.

An unusually small and undeveloped scrotum is found in all these children, the result, not the cause of the condition.

Careful examination of the inguinal canal and its surroundings will usually disclose the position of the testicle (unless within the abdomen), and the discovery of a small tumor in the canal painful on pressure, taken in connection with the empty scrotum may be regarded as reliable evidence of non-descent.

Failing to find the testicle in the inguinal region, the region over the saphenous opening and the perineum should be searched for misplaced testicle.

Operation: We shall make our incision over the inguinal canal, dividing skin, superficial fascia, and the aponeurosis of the external oblique.

We are now in the inguinal canal, and find a pouch of peritoneum which extends from the internal ring to the bottom of the scrotum. On opening this peritoneal pouch we observe the testicle within.

We now divide this pouch or vaginal process transversely being careful not to injure the cord. The upper end of the divided pouch is closed with a cut-gut ligature just the same as we treat the sac of a hernia. The lower end of the pouch we close with a purse-string suture, making a tunical vaginalis for the testis (Fig. I).

With a gauze sponge we push the peritoneum away from the cord, and by this process the cord is gradually lengthened: the cord is freed of everything except the vas and the vessels (Fig. II). We are now ready to replace the testicle in the scrotum. Before making the replacement we shall prepare a roomy pocket in the scrotum by doing a blunt dissection with the fingers (Fig. III). The testicle now lies in its normal position in the scrotum without tension. The wound is closed as an ordinary operation without transplanting the cord.

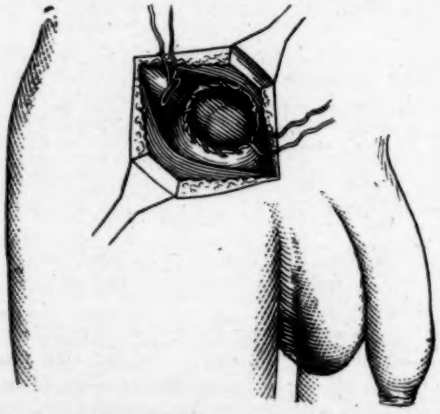

Fig. I.—Upper end of vaginal process ligated. Purse-string suture closing lower end of vaginal process and forming a tunica vaginalis for the testicle. (Bevan.)

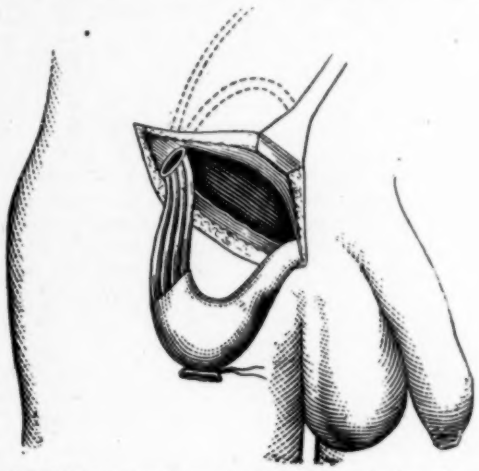

Fig. II.—Cord lengthened, testicle freed and ready for replacement. (Bevan.)

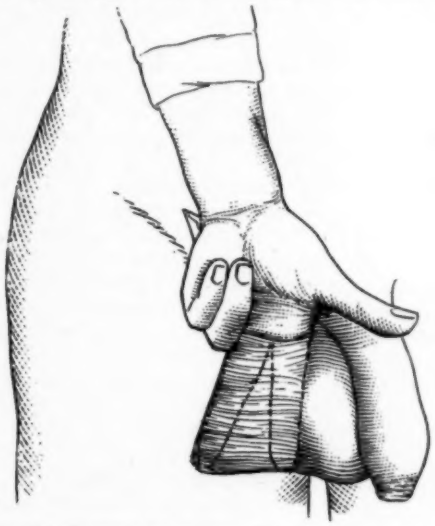

Fig. III.—Making pocket in the scrotum for reception of the testicle. (Bevan.)

Comment: It will be recalled that in normal development the testicles migrate during fetal life from the abdomen, through the inguinal canal, to their permanent position in the scrotum. It is evident that in faulty development either the testicle may permanently lodge at any point between its original site and the

scrotum—undescended testicle; or it may descend, but finally lodge in some abnormal position—*misplaced testicle*. These abnormal positions of the testicle have not only an important physical and psychical influence on the growth of the individual, but they are associated with grave pathological possibilities.

It must be remembered that the testicle is not only a gland with a procreative function, but it is a gland with an internal secretion essential to the development of the distinctly masculine type. Not only this, but certain grave complications are inevitable.

Note that an undescended testicle is an imperfectly developed organ, and if not corrected before puberty its ability to secrete spermatozoids is probably lost; hence, in bilateral displacement, the individual is probably sterile.

Again, these misplaced testicles are predisposed to torsion of the cord from the action of the inguinal muscles, which give rise to severe disturbances, such as pain, nausea, and vomiting, frequently simulating appendicitis or strangulated hernia. Lastly, imperfect development, constant irritation, and pressure of surrounding structures predispose the retained testicle to malignant disease (sarcomatous degeneration).

Treatment: These cases require careful management. *Remember that a large number of undescended testicles will make their way into the scrotum before the age of puberty.*

Hence, uncomplicated undescended testicle needs no treatment before the tenth year. Operation should be done between the tenth and twelfth year. In very early childhood massage may help to bring the testicle down, but after this period it is a useless procedure.

In nearly all cases of undescended testicle situated in the inguinal canal a congenital hernial sac is present.

Hence, hernia and undescended testicle are usually coincident. Now you will readily appreciate how difficult it is to keep the hernia in place without injuring the testicle; not only this, but there is always danger of strangulation. It is sometimes possible to keep the hernia in place by means of a "forked truss"—a truss with a "forked" pad—to avoid pressure on the testicle. However, all forms of truss cripple the child and cannot be worn without danger.

Hernia complicating undescended testicle is a positive indication for operative interference.

In the early months no truss, no treatment is necessary, since the dangers of strangulation at this period are very small. But when the child reaches the second or third year (depending upon its nutritional coefficient) an operation for the radical cure of the hernia and retained testicle should be performed.

To sum up, remember the following rules:

1. Uncomplicated undescended testicle, operate between the tenth and twelfth years.
2. Undescended testicle complicated with hernia, operate between the second and third years.
3. Massage in very early childhood is permissible, but it is always difficult, sometimes dangerous, and seldom successful.

Appendicitis in Childhood.

History: Patient, male, six year old, is sent to the the hospital because of persistent pain localized in the right iliac fossa. Two days ago the patient was suddenly seized with bellyache, vomiting, and fever.

The parents have noticed that the child has not been in normal health for the past two weeks, there has been more or less gastrointestinal disturbance, and some malaise.

Examination: There is a palpable mass in the right iliac fossa and exquisite tenderness.

Besides, the patient is lame. He limps when he attempts to walk and bends slightly toward the affected side.

Rectal examination is negative.

Temperature 102, pulse 100, respiration 30.

Comment: This is evidently a typical case of appendicitis. The symptoms of acute inflammatory reaction, and the palpable mass in the appendicular region make the diagnosis extremely simple. Besides, *the patient limps when he walks.*

What relation has lameness to appendicitis?

We must not forget the position of the psoas muscle lying beneath the fascia of the iliac fossa. The inflammation in the appendix sometimes extends to this overlying fascia, and the action of the psoas muscle which accompanies movements of the lower extremity is communicated to the inflamed viscera, hence the effort to keep the psoas at rest causes limping.

Appendicitis merits special consideration in childhood because of its frequency, its often obscure symptomatology, its peculiar clinical course, and its special rules of treatment. Appendicitis in the child differs in many details from the adult type, because the child is more than a miniature adult. The child presents special characteristics in his anatomical relationships. There is a difference in the plasticity of the tissues, the inflammatory reaction, the operative risk, and the after treatment.

I call your attention to certain anatomical differences found in the child.

The relatively shorter lumbar region of the child causes the cecum to lie at a comparatively higher level, and thus the appendix of the child is situated at a point higher than "McBurney's point."

Again, the infantile appendix is relatively larger as compared with the rest of the alimentary canal than in adults, while the walls are much more delicate, especially the submucous coat. Drainage is superior in the infantile appendix since in the smoother mucosa and greater lumen there is less tendency to the formation of valves which close its cecal opening.

Finally it must be remembered that in the infant there is no line of demarcation between the abdomen and the pelvis. The pelvis is but the cone-shaped terminus of the abdominal cavity. At this period the bladder is in greater part an abdominal organ. It is not until the child begins to walk that there is any striking change which differentiates the abdominal and pelvic cavities.

Appendicitis is rare in children under two years of age. Why? Because the smoother mucosa and relatively larger lumen of the appendix give better drainage; there is less tendency to retention of secretions; the prone position of the infant prevents congestion; while the simple diet and fluidity of the stools render the intestinal tube free from stagnation and fecal concretions.

In older children the etiology is the same as in adults. *Appendicitis is largely a matter of defective drainage and defective structure.*

When we consider the excessive length compared with the lumen of the appendix; the fact that this long, narrow tube is blind at one extremity, while at the other it communicates with the cecum, a center of infectious material; and that it is guarded by a valve at its cecal orifice (the valve of Gerlach) it is evident that if the

appendix is joined to the cecum at an acute angle, or if the mucosa in the neighborhood of the valve be swollen, there results a tube with both extremities sealed, and all possibility of drainage eliminated.

Again, the appendix contains a relatively large amount of lymphoid tissue (the "Abdominal Tonsil"). This tissue is of low vital resistance, specially prone to bacterial invasion. All these facts suggest that the appendix is histologically prone to inflammatory processes, since *here we have a particularly susceptible tissue contiguous to a particularly infectious center.*

Operation: We make our incision over the palpable mass, along the outer border of the right rectus muscle. Remember, that in operating on children, the tissues are much more delicate than in the adult, the abdominal wall is much thinner and the peritoneum should be approached with care.

We cautiously open the peritoneum, note the pus welling up through the opening.

I introduce my finger and observe that we have an appendicular abscess well walled off from the peritoneal cavity.

First let us evacuate the pus, using no pressure; the intraabdominal pressure will force the pus to the surface. We mop the pus away with dry sponges, using no irrigation, and making all our manipulations with due delicacy, so as not to injure the tissues or dessiminate the infectious material by tearing away the protective barriers.

Having cleared the field of pus, we pour some peroxide of hydrogen into the wound to further cleanse the tissues.

The next step is to remove the appendix—if possible. By that we mean the appendix is to be removed if it can be easily reached, and if its removal does not endanger the patient's chances of recovery.

It is the merest folly to attempt to remove an appendix if its removal means the destruction of the lymph barriers which protect the general peritoneal cavity.

I can now feel with my finger the outlines of this appendix buried in a mass of lymph. I shall very carefully endeavor to dislodge it. Here is the appendix presenting in the wound. Note that its tip is gangrenous and ruptured. We excise the appendix, and place a rubber drain so that it reaches the deepest possible point.

The abdominal layers are sutured leaving only an exit for the drainage tube.

After-treatment: However carefully the operation has been performed, a successful issue of the case cannot be expected without rational after-treatment.

Two procedures are of the utmost importance: (a) *The Fowler Position.* The posture of the patient is of the utmost importance in securing proper drainage As soon as the patient is returned to his bed he should be placed in the "Fowler position" (semi-sitting) to direct the drainage toward the pelvis and prevent further toxic absorption through the diaphragm.

(b) *Prevention of a dangerous lowering of the blood pressure by the introduction of normal saline solution.*

By the reaction of the inflammation the vessels of the abdomen are dilated; the child bleeds into his abdominal vessels; and furthermore, the suppuration makes a great demand upon the body fluids, all of which contributes to a dangerous lowering of the blood pressure and weakening of the heart action. Restoration of the blood pressure is admirably accomplished by the introduction of normal saline solution by means of the "Murphy drip" (introduction of saline solution into the rectum by the "drop method").

The "Murphy drip," however, is not well borne by children because of their restlessness, and it is better to use small enemas of normal saline every half to one hour (microclysis). In administering these enemas bear in mind that they must be small enough to be retained, not more than two or three ounces.

Points of Difference in the Pathological Process.

The evolution of appendicitis in the child presents several points of difference from that of the adult type. *Appendicitis in children is not so fatal an affection as in adults because the infant's appendix is less prone to perforation and gangrene. The tendency of the disease in the child is toward the formation of a localized abscess.*

At the first onset of inflammation the omentum promptly offers its protection by wrapping itself about the diseased organ, thus walling it off from the general peritoneal cavity. Hence unless the abscess ruptures, general peritonitis is rare. Not only is there found the primary abscess surrounding the appendix, but, as the disease evolutes, secondary abscesses are formed which may communicate with the primary focus by a narrow canal, or be completely separated. This condition is notably illustrated in the secondary pelvic abscesses.

Again, abscess may appear in the left iliac fossa or in both fossae at the same time. The so-called left-sided appendicitis in children is usually a secondary iliac abscess situated on the left side.

It is also to be remembered that multiple purulent foci, independent of each other, may become encysted, and if the surrounding adhesions are inadequate for defense they may at any time rupture into the general peritoneal cavity and set up a diffuse peritonitis.

Secondary Complications of Other Organs.

Not only is there a tendency to localized suppuration of neighboring parts, but to the involvement of organs at a distance—such as subphrenic abscess, abscess of the lung, liver, brain and parotid.

Not infrequently does a pleural empyema follow in the wake of appendicitis, and Kelly observes that it has happened in several instances that a pleural empyema has been discovered and operated upon, while the primary cause, a suppurating appendix, has not been discovered until the post-mortem.

Finally, let it be emphasized that the pathological picture in appendicitis of childhood is the picture of localized suppuration.

It is this fact that explains why the disease is less fatal in childhood than in adults, and why so many untreated or badly treated cases survive in spite of procrastinating measures, which in the adult would prove fatal.

Mother Nature never leaves her children wholly unprotected; for every defect there is some compensatory provision; and if the child cannot intelligently articulate its abdominal distress, yet it is not without a sign; for the handwriting is on the abdominal wall, so that he who will may read.

Let it be understood that the treatment of appendicitis is distinctly surgical and that he who treats it must assume the role of surgeon.

He who practices the expectant treatment shoul lers a large responsibility, for the results of early operation in children are just as good as in adults and the threatening phantom of general peritonitis casts its shadow upon every case unrelieved by operation.

Imperforate Anus.

History: Male, three days old, enters hospital because it has been observed that the child does not soil the diaper, and there is no aperture at the normal anal opening.

The child is restless, vomits, refuses the breast and the skin is jaundiced.

On examination we find that this is one of the very rare developmental defects; for this is not an example of true imperforate anus but rather of *absence of the anus*—the perineum is perfectly smooth, there has been no attempt at anal invagination. Furthermore, note that there is a suggestion of feces passing with the urine through the penis, evidence that there is a communication between the rectum and bladder or rectum and urethra. This still further complicates the situation.

Comments: There are many curious developmental defects of the rectum and anus, such as absence of the rectum or anus or both; and again, the opening of the rectum at some unusual point, such as the bladder, deep urethra and vagina.

The most common congenital defect of the rectum is *imperforate anus,* occurring most frequently at the anorectal junction. The reason for this defect is apparent. The rectum is developed from the terminal extremity of the hind-gut; the anal canal by an invagination at the site of the anus, the septum between the two being normally absorbed and a continuous canal formed. Failure of this partition to absorb results in imperforate anus (Fig. IV). The occlusion may consist of a thin membrane, which is readily incised, or it may attain considerable thickness, requiring extensive operation to obtain relief and establish a permanent canal.

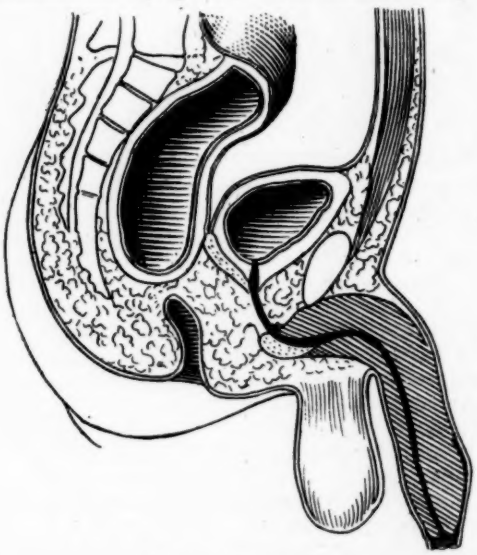

Fig. IV.—Imperforate anus.

Absence of the anus, the condition which is shown in this case, is very rare (Fig. V). As you observe nature has made no attempt at the formation of an anus. The smooth perineum offers no suggestion of an orifice. Even when the child cries there is no intimation of the depth at which the bowel is occluded. It is obvious that in such a case as this the prognosis is extremely unfavorable.

Note that while there is absence of the anus yet there is not very much abdominal distension, for the obstruction is not complete; there is a fistulous communication here between the rectum and bladder or urethra and this relieves the pressure and makes the symptoms less urgent.

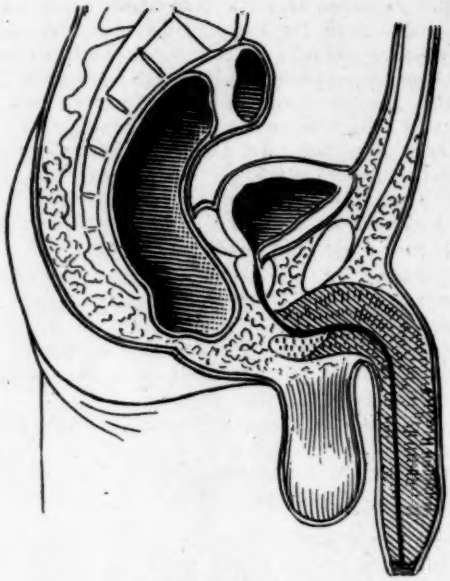

Fig. V.—Absence of anus.

Operation: This child is only three days old, we shall therefore not subject it to the dangers of a general anesthesia. In very young children the nervous reflexes are not very acute and it is wiser to dispense with the anesthetic. We have no guide here as to where the blind pouch of the rectum is to be found; we shall incise the perineum and search for the rectum in the place where it anatomically should be.

We expect to find it somewhere along the curve of the coccyx and sacrum. I am constantly pushing back the tissues with my finger to avoid cutting the vessels. I do not want this child to lose a drop of blood unnecessarily. When the child cries I feel something like distended gut pressing down on my finger. Here is the bluish, cystic-like mass which I shall aspirate. The content is fecal and we shall therefore incise and relieve the distension.

This fluid rectal pouch is about two inches above the perineum. Having cleansed the wound of the feces we now bring down the edges of the gut and suture to the skin margin.

We do not expect to get here sphincteric control, for absence of the anus means that the sphincter ani does not exist.

There is one word of warning I would emphasize.

The fact that the child does not soil the diaper is the first intimation that there is an occlusion of the rectum, and an examination should be immediately made to establish a diagnosis. The child should be placed on its back and the parts thoroughly exposed so that the anal region may be examined with the greatest care. If there is absence of the anus as just demonstrated, the diagnosis is evident but if the anus be apparently normal, and the occlusion be due to an anorectal septum, there is only one way of proving this, and that is by passing a sound.

I have seen a case of this kind given enemas for a week to try and move the bowels, and the real cause of the obstruction was surmised only when it was too late for operative interference.

394 Clinton Avenue.

TOMORROW'S DOCTORS.*

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What is the doctor's social position? That depends largely upon what he wishes it to be.

There are three chief social sets in all civilized countries under present methods of organization. The doctor will join any one of the three according to his taste and training. (Taste and test are synonymous terms in this connection). The fashionable set consists of people who have "passed up on their examinations" in theoretical morality, and having passed these examinations are then free to do well or badly as they please, knowingly. The criminal set consists of people who have not taken up studies in theoretical morality and who feel free to do as they please, ignorantly.

Civilized society has only one dominating perennial fear, and that is its fear of ignorance, because ignorance causes about all of the great distress in the world of men. A sculptor wishing for a master vision could make an heroic demon *Ignosco* who is engaged in placing his hand over the eyes of those who are trying to see. Human society does not worry very much about crime, because its members have all experimented with it in mild doses at least, in order to see how it works, and to become familiar with its mien. They know pretty well how to establish methods for protection against crime, but ignorance makes the best of men stumble and blunder. When Napoleon ordered the execution of the Duc D'Enghien the act was spoken of by Fouché as being "worse than crime,—a blunder!"

The third social set is the exemplar type set. This set is busily engaged in research work, trying out all problems of *mores,* and presenting reports from time to time. The exemplar set is nature's favorite in all forms of organic life. Her substantial rewards go to that set. To young men particularly,—to those who are in a state of unrest in response to nature's urge toward mutation, I would call attention to the fact that the most durable satisfaction will consist in remaining in the front rank of the exemplar set. The mutants who obtain renown through crime or through art are placed in the elimination class by nature. They may accomplish great things while they are at work, but they are uncomfortable much of the time as a rule, and their family lineage is soon brought to an end. If the best that a doctor can do is to make display, then the fashionable set offers a field. If his intelligence is not sufficient for allowing him to make an income without engaging in criminal procedure, then the criminal set offers to him the best outlook. If he is interested in lending a hand to nature in working out human problems, then the exemplar type group will constitute his setting. The higher he is enabled to stand among the exemplar type men, the higher his real social position.

If one feels in duty bound to devote his life work to serious matters in a large city, he must draw the line rather arbitrarily on social enjoyment. He may see trusted friends occasionally, and have the satisfaction of being in touch with big things and big business,—a sort of stimulation which is always desirable. I asked the brilliant wife of a popular public official how she managed to escape social bondage and devote herself to the many utilitarian occupations in which she was engaged. Her reply was, that the only feasible way consisted in making one's self as uninteresting as possible to everyone excepting those who were loved.

There is a nobility group as opposed to the opportunist group among doctors, engineers, statesmen, lawyers and the clergy. The nobility group in the medical profession holds that secret division of fees is betrayal, for purposes of money gain, of people who have put confidence in their doctors. The original basis for this form of betrayal of trust lies in the conventional tradition that a family physician should not charge as much for his responsibility as the specialist charges. The conventional victim of fear-thought does not dare to charge properly for his service, but desiring money nevertheless, becomes an anti-climax hero by asking for it through some opportunist specialist, who sees at a glance his chance for making an useful retrieving spaniel of the timid physician through suitable petting and reward.

I asked one of my assistants who was returning to his home town in Canada to engage in practice, if fee splitting prevailed there. He replied that it was not directly a custom, but he knew of a first rate surgeon in a certain city not far away, a teacher, who split fees and even paid commissions to students who sent cases to him. It had resulted in his obtaining a very large surgical practice.

This institution identifies itself and lends its backing to an example which is thoroughly demoralizing to young men. The teacher might better inoculate each student with small-pox. Is there any graduate from this school who will not start wrong in his merciful occupation? Few will escape. Some young men with good fathers and mothers will have been taught high principles, but many an ambitious graduate without inspiring home influence will note a short road to financial success. Who could blame him?

My assistant said that he himself had planned to give twenty-five dollars to the physician who sent him a case, but this physician was to administer the anesthetic. I asked if this was not in the nature of a bait, and if the patient and surgeon were sure to have the best anesthetist procurable. The bait question always furnishes a criterion for judgment if one is in doubt about his rectitude.

Another point which my assistant brought up related to a practice in his town; of the doctor who knew little of surgery asking a more expert surgeon to assist him and then dividing the fee. I asked if such a procedure would not be inimical to the patient's best interest. It would at least be on the borderland of unwise procedure, and I informed my assistant that he should not take part in that sort of work if he wished to retain his dignity. Furthermore, he would be held responsible for bad results. This young man had been impressed by the large practice of the immoral teacher at the college. We must remember the Biblical warning to one who harbors certain kinds of people. Any institution which harbors a prostitute among its teachers is sending out disease with practically every graduate from that institution. His crafting is talked about among young men. His financial success is noted by them in comparison with that of honorable men. When income is slow they say to themselves "Perhaps I must do as he does or get left."

In every community there are some discerning laymen who know the difference between types of professional men, but the public as a whole does not know which way to run. Does it even know the difference, in affairs of state, between a demigod and a demagogue?

* Advance pages from a book entitled Tomorrow's Topics, to be issued in May by Doubleday, Page & Company, New York.

A profession is as high as its highest men who avoid decomposition of character, and no higher.

At the present time the legal profession is undergoing a rapid change toward commercialism. Corporations are taking charge of the larger part of litigation. Corporations, according to an established by-word, have no souls, and the ethics of the legal profession are disregarded by impersonal firms which divide up work in the office, leaving the nice department of soul to a silent partner. My idea is that the taking of commercial business from the individual lawyer really allows him to escape from the danger of his own commercialization. It seems to leave him free to enter new and original fields of litigation which have not as yet been taken up by corporations. If doctors are now to enter entirely new fields of practice, and with more practice than at any time in the past, it is not improbable that the legal profession may find parallel opportunities.

This part of the twentieth century is marked by a readjustment in both the medical and legal professions. Perhaps there has never been a time in the history of the world when greater need existed than right now for the physician or for the legal solicitor who is guide, philosopher and friend. That being the case, the readjustment will eventually give us what the people need. Readjustment in the clerical profession will soon follow. The pastor who is guide, philosopher and friend, is needed more than ever before. He will cast off superstition from his best teaching, and will show us the glory of God and of Christ in their true forms, as works of man. Myth and miracle will have to be retained, however, but held in reserve for employment with certain types of mind, very much as we are to retain fairy tales for children. I believe that honesty will eventually pay the clergyman as well as it now pays the business man. The child mind easily comprehends the idea of the good Samaritan when it is inculcated as a matter of ethics, but when a child is asked to quote the incident as a fact in real history, he is likely enough to inform his teacher that "a certain man went down from Jerusalem to Jericho and he fell by the wayside and the thorns sprang up and choked him."

Tempora mutantur et nos mutamur in illis. The ethical standards of the "three learned professions" are to suffer during their present transition stage. There has been a sort of revision of ethics downward, and this has had for its corollary the substitution of the economic motive for the sentimental. In times past, away back as far as the days of Herodotus and Thucidydes the sentimental motive guided men toward glory. During the first fourteen years of this present century glory has been put into cold storage for awhile, leaving its defenders free to doff their coats and get a living out of life. The layman has already been benefited by the change in methods of the legal profession. He has been harmed by changes in the standards of the medical profession. He will be benefited by changes in the clerical profession. Eventually members of the "three learned professions" and their lay clientele will be benefited on the whole, because human interests are inseparable from interests of men who exercise chief controlling interest over them. The changes which are now taking place for readjustment of the times will bring their own solution of questions which relate to standards of intellect, character and feeling, and the "three learned professions" will then rest upon a firm static basis until such time in the course of progress as it becomes necessary to make further changes in their constitutions. Great changes in the methods of the learned professions do not take place so rapidly as they do in business or in the sciences because their principles are like those of the Constitution, in the respect that they serve as fixed points from which activities extend. It is only when tension becomes very great as a result of traction by large new movements that professional principles are changed, and the process must be conducted rapidly, with more or less disarrangement and disorganization of "traffic" until new structures are completed.

Changes in the medical profession have been more dramatic perhaps than in the legal profession during the past two decades. As a result of the great activity of physicians in cutting off their own sources of income, a great many of them found it difficult to support their families. The higher order of mind which led to those changes by men who make advances, liberated a lower type of mind on the part of another group of physicians. From the noble protector standing guard, some of them reverted to the jackal type, and eagerly followed the trail of every patient who could be hunted up and sent to a commercial specialist, who would divide the fee. In former years practically every family physician stood as protector over every interest of the patient, and when he was impressed with the necessity for sending a patient to a specialist, he commonly persuaded the specialist to accept a smaller fee than was deserved. "This is a friend of mine," he would say, "and I wish you would let him off easy." Under the new order of things the instinct of protection to members of a clientele was changed into an attitude of persuasion which would lead the patient to pay at least full fees.

In connection with the destructive tendency of a certain part of the profession to engage in fee-splitting there has been a compensation, as usual. Very much more surgery has actually been done and more patients really requiring surgery have received benefit than would have been the case if their physicians, busy with other work, had left them "until tomorrow." It is not improbable that a bad movement has had on the whole a result which would add up to the good, notwithstanding the unnecessary surgery, or surgery by incompetent operators, which was incidentally done. One often wonders why people give over their lives and their happiness to medical advisers who are in no way competent, and who would not be trusted at all with the patient's bank account. Times are changing. Some day people will know.

616 Madison Avenue.

Death Rates of States.

Following are the death rates per 1,000 population in 1913 for the states included within the registration area: California, 14.5; Colorado, 11.5; Connecticut, 15; Indiana, 13.3; Kentucky, 13.3; Maine, 15.3; Maryland, 16.2; Massachusetts, 15; Michigan, 13.9; Minnesota, 10.4; Missouri , 12.5; Montana, 12; New Hampshire, 17.1; New Jersey, 14.3; New York, 15; North Carolina (figures relate only to municipalities having a population of 1,000 or over in 1900), 16.8; Ohio, 13.8; Pennsylvania, 14.6; Rhode Island, 15; Utah, 11; Vermont, 15.8; Virginia, 13.9; Washington, 8.5; Wisconsin, 11.5.

The lowest death rate shown by any registration state was that for Washington (8.5 per 1,000), while New Hampshire's rate (17.1) was the highest. The fact that the average age of Washington's population is much lower than that of New Hampshire's doubtless constitutes the chief reason for this difference; and a like explanation holds good in many similar cases.

A CUTANEOUS REACTION IN TYPHOID.

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The earliest definite experiments made toward the development of a skin-reaction in typhoid were those of Deehan[1] and Floyd and Barker[2]. These observers were preceded in the field by Chantemesse[3] and Hamburger[4] with their extremely delicate but highly dangerous ophthalmic reactions. More recently an important contribution has been made to our meagre fund of clinical data on this subject. Gay and Force[5] have made some valuable observations of the reaction of the skin to a suspension of dead typhoid bacilli in persons that have received prophylactic typhoid vaccination or have had the disease.

The technic and results are practically identical with the von Pirquet tuberculin reaction, the difficulty arising in the production of a suitable "typhoidin."

Deehan used a suspension of B. Typhosus prepared by growing the organism on agar 24 hours, washing the growth off with saline, incubating for four days at 37.5° C., killing the organisms at 60° C. for half an hour and centrifugalizing. The supernatant fluid was retained and standardized to contain 3 billion bacteria per cubic centimeter. The idea in using a saline suspension arose from the claim of Vaughan[6] that the proteid molecule or the typhoid bacillus is composed of a toxic and nontoxic group and these may be extracted by hydrolysis, and since they are both soluble in water there would be in the suspension prepared as above both the soluble albumin of the organism and a toxic principle which gives rise to the mild inflammatory process in the skin.

Deehan's series, though small, is fairly convincing. In twelve cases diagnosed clinically as typhoid and checked by the Widal reaction he obtained reactions of varying intensity in all, while in eight cases diagnosed as other than typhoid he obtained no positive results.

Gay and Force have applied their reaction more particularly to the determination of the length of the artificial immunity following prophylactic typhoid vaccination. They use a 5 per cent. glycerin broth culture of the B. Typhosus, incubated five days and reduced without filtration to one-tenth the original volume over a 56 acetone bath. Using for control a sterile 5 per cent. glycerin broth evaporated in a similar manner. Their observation covered a series of 124 cases with the following results: positive reaction in 95 per cent. of the cases recovered from typhoid. No reaction in 85 per cent. of the persons without history of typhoid. Positive reactions in 82 per cent. of the persons vaccinated against typhoid by the Army, Cutter and Gay and Claypole methods.

In my work on this subject I have used the material prepared as described by both Deehan and Gay and Force with results similar to their own.

SERIES 1—DEEHAN SUSPENSION.

No.	Type.	Widal.	Typhoidin.
1	Clinical Typhoid 16th day	1-60	XXX
2	Typhoid vaccination 8 months	1-30	XX
3	Typhoid vaccination 3 years	Negative	Doubtful
4	Positive Wasserman	Negative	Negative

This preparation although its results were seemingly satisfactory, is somewhat difficult to prepare and for this reason its wide-spread clinical use is scarcely possible at present.

SERIES 2—GAY AND FORCE GLYCERIN-BROTH.

No.	Type.	Widal.	Typhoidin.
1	Clinical Typhoid 18th day	1-60	XXX
2	Typhoid Vaccination 8 months	1-30	XXX
3	Typhoid Vaccination 3 years	Negative	X
4	Typhoid Vaccine 1½ years	1-40	XX
5	Typhoid 10 months ago	1-30	XX
6	Positive Wasserman	Negative	Negative
7	Tertian Malaria	Negative	Negative

The results obtained with this product were slightly more marked in the same cases than with the Deehan suspension due, no doubt, to its greater concentration. The same difficulties of preparation also attend the use of this method and would make the carrying out of the reaction somewhat outside the scope of routine.

The idea of using the commercial prophylactic typhoid vaccine occurred to me and the results obtained with its use have been encouraging, and places the material for the reaction in the hands of every physician. The "Dose No. 2" containing one billion killed bacteria was used. This suspension is preserved with two-tenths per cent. tri-kresol and in the first tests a two-tenths per cent. solution of tri-kresol in normal saline was used as a control. This, however, gave no cutaneous reaction in 36 normal individuals, so the presence of the tri-kresol was deemed negligible and its use in the control was discontinued.

The technic of the procedure is as follows. The skin of the upper arm is aseptically prepared with alcohol and ether and washed with sterile water. Two abrasions are made in the skin, but no blood drawn, with a sterile Hagedorn needle, each about five-tenths of a centimeter in diameter, one above the other three inches apart. On each of these spots is placed with a sterile toothpick one drop of the typhoid vaccine. A similar abrasion is made between these first two and on it is placed a drop of sterile saline for control. These are now allowed to dry for twenty to thirty minutes before the sleeve is pulled down with no dressing applied.

The reading of the reaction is simple. A "positive" gives a red, inflammatory areola around the upper and lower abrasions of varying diameter from five-tenths to two centimeters, with no change around the middle abrasion. Twenty-four to forty-eight hours is generally sufficient time for observation and the reaction usually fades in from three to seven days. In two instances I have observed the condition described by Gay and Force where there was a markedly positive manifestation in less than ten hours, which disappeared a few hours later.

The following series of cases is illustrative of the results obtained.

SERIES 3—ANTITYPHOID VACCINATION BY ARMY METHOD.

No.	Type.	Widal.	Typhoidin.
1	3 years ago	1-30	X
2	4 weeks ago	1-60	XXX
3	14 months ago	1-40	XXX
4	1 year ago	1-40	XXX
5	8 months ago	1-40	XX
6	2 years ago	Negative	X
7	6 months ago	1-50	XXX
8	3½ years ago	Negative	Doubtful
9	4 years ago	Negative	Negative
10	3 years ago	Negative	X

SERIES 4—AUTHENTICATED CASES OF TYPHOID.

No.	Time.	Widal.	Typhoidin.
1	10 years	Negative	X
2	15 years	Negative	Negative
3	2 years	1-50	XX
4	18 years	Negative	Negative
5	9 years	1-30	X
6	7 months	1-60	XXX
7	3 years	1-40	XX
8	2 months	1-80	XXX
9	5 years	Negative	X
10	1 year	1-40	XX
11	6 years	Negative	X

SERIES 5—CASES OF TYPHOID DURING COURSE OF DISEASE.

No.	Time.	Widal.	Typhoidin.
1	14th day	1-60	XXX
2	8th day	1-60	XX
3	12th day	1-60	XXX
4	22d day	1-50	XXX
5	18th day	Negative	Negative
6	30th day	1-40	XXX

SERIES 6—CASES WITH NEGATIVE TYPHOID HISTORIES AND NEGATIVE WIDAL.

No.	Type.	Widal.	Typhoidin.
1	Positive Wasserman	Negative	Negative
2	Positive Wasserman	Negative	Negative
3	Tertian Malaria	Negative	Negative
4	Carcinoma of Lip	Negative	Negative
5	Pregnancy, 7th month	Negative	Negative
6	Ex-soldier, 1898	Negative	X
7	Student, good health	Negative	Negative
8	Student, good health	Negative	Negative
9	Student, good health	Negative	Negative
10	Student, good health	Negative	Negative

In conclusion it may be stated that the commercial antityphoid vaccine serves as well as an agent to obtain the cutaneous reaction as especially prepared suspensions. It produces an unmistakable cutaneous reaction in 80 per cent. of persons vaccinated against typhoid from 4 weeks to 4 years previously: it produces a reaction in 81 per cent. of persons having had authenticated typhoid infections 2 months to 15 years ago and in 80 per cent. of cases during the course of the disease. There was no reaction in 91 per cent. of normal individuals who gave no history of typhoid or of having received the prophylactic vaccination. The one exception in Series 6 had doubtless had an unrecognized typhoid infection during the Cuban campaign.

That this reaction gives valuable evidence regarding the existence of immunity is quite obvious. And, as a means of diagnosis in typhoid, which is less technical and does not require the apparatus necessary for a Widal, demands for it further investigation.

I wish to acknowledge the assistance of the several physicians who have furnished me clinical data on the cases in the series.

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Fewer Deaths from Tuberculosis.

The death rate from tuberculosis (all forms) declined from 149.5 per 100,000 population in 1912 to 147.6 in 1913. The rate from this cause shows a continuous, though irregular, decline from year to year since 1904.

The death rates from cerebral hemorrhage (apoplexy) and organic heart diseases and endocarditis also declined as compared with 1912, the former from 75.7 to 74.6 per 100,000 population, and the latter from 151.2 to 147.1. These rates, however, are higher than in most of the years between 1900 and 1912.

Although the rates for typhoid fever, scarlet fever, diphtheria and croup, pneumonia (all forms), and diarrhea and enteritis (infants under 2 years) show increases as compared with 1912, there has been a general and pronounced decline in the rates from these causes since 1900.

The Harrison Law.

The Harrison anti-narcotic law, which passed the Congress in December, 1914, becomes effective March 1, 1915. It affects every practising physician and each one should lose no time in subscribing to its tenets. The *Journal A. M. A.* thus tersely describes the bill:

"Its object is to limit the sale of habit-forming drugs to legitimate purposes by requiring a record of all transactions in such drugs. Any physician who dispenses or prescribes any drug preparations containing opium or coca leaves or any of their derivatives is required to register with the collector of internal revenue of his district and to pay an annual registration fee of one dollar. This is prorated for the period from March 1, 1915, to July 1, 1915, at 34 cents. Physicians dispensing their own drugs must use the blank prescribed by the commissioner of internal revenue in ordering their supplies, and must keep a record of all habit-forming drugs dispensed to patients. Physicians prescribing drugs must sign their full name and give their registration number with the name and address of the patient on each prescription. All persons having such drugs in their possession March 1, 1915, must make an inventory of such drugs showing exactly the amount on hand at that time. This inventory, which must be verified by affidavit, is kept by the individual and is not filed with the commissioner. One important point of controversy between the physician and the druggist is settled by the ruling of the commissioner of internal revenue. Only the original of prescriptions containing these drugs can be filled. The refilling of prescriptions is forbidden. Patients desiring an additional supply of such drugs must procure an original prescription from the physician. The law also requires a general registration of all physicians, dentists, druggists and veterinary surgeons, and only such persons will be allowed to dispense or prescribe these drugs. This law is a legislative experiment. Some time, many regulations and several amendments will probably be necessary before it can be reduced to smooth working order. In the meantime, physicians should at once take two precautions: They should make immediate application to the deputy commissioner of internal revenue of their district for registration, and they should make an inventory of all drugs and drug preparations in their possession containing opium or cocain, so that when the law goes into operation, March 1, each physician may have written evidence of the amount of these drugs in his possession at that time. Whether or not it will be possible to put so sweeping a measure into effective operation in so short a time remains to be seen; but physicians can give material assistance in the enforcement of the law, and can relieve themselves of any danger of embarrassment by taking these two steps at once."

There are a dozen sections. Section 1 shows the requirements for registration and gives the obligations upon the physician.

Section 2 provides how the written orders for the prescribing of drugs are made.

Sections 3, 4 and 5 provide for the rendition on the part of any registered physician of the amount of the drugs prescribed by him, forbid interstate commerce except by a registered person, and provide for the opening of the records of officers of the Treasury Department.

Section 6 notes that the act does not apply to preparations which do not contain more than two grains of opium, or more than one-quarter grain of morphine, or one-eighth grain heroin, or one grain codein, in one fluid ounce; and shows that the act does not refer to liniments or ointments, or other medicinal preparations except those which contain cocain, any of its salts, or alpha or beta eucain.

Sections 7, 8 and 9 provide for the applicability of the act, and for the penalties for violations thereof.

The remaining sections have to do with the strictly legal part of, and the carrying out of, the requirements of the legislation.

For the widespread distribution of the wheals of urticaria a good lotion is:

Phenol	ʒss	(2)
Acid Boric	ʒi	(4)
Pulv. Talcum	ʒii	(8)
Aqua Pura	ʒiv	(128)

—Knowles.

The Medical Times

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NEW YORK, MARCH, 1915

War, Tuberculosis, and Civilization.

Over a million people die annually of tuberculosis in the civilized world (Farrand). The annual tuberculosis death rate per 100,000 persons living in the principal cities of the world in 1911 averaged 176 (London, Edinburgh, Glasgow, Montreal, Paris, Amsterdam, Berlin, Hamburg, Vienna, New York, Chicago and Boston). Rosenberg found the rate in six cities in different parts of the United States to average about 166 in 1912 (Providence, Indianapolis, Los Angeles, Boston, Binghamton and Columbus). Out of two million people living in these six cities, over three thousand died in that year. Huber estimates that tuberculosis claims, between infancy and old age, every seventh, and between adolescence and maturity every third or fourth life—in some of our communities every other life. Every other adult negro succumbs to it. Except in the tropics and near the poles the death rate does not vary greatly. According to Allport, out of twenty million school children one million have tuberculosis. Mary Lapham states that 75 per cent. of the children in the Boston public schools are infected.

The total mortality of our Civil War, of the French Revolution and First Empire, Crimean, Russo-Turkish, Franko-German, Spanish-American, Boer, Russo-Japanese and the recent Balkan wars adds up about five millions. In point of time they covered about forty years, so that each year meant 125,000 deaths. But since the breaking out of the French Revolution at least one hundred million have died of tuberculosis, and during the forty years of warfare alluded to, eight times more people died of tuberculosis than of wounds.

If in the present War of the Nations we total the standing armies of the powers engaged and the first and second reserves, about 15,000,00 men are or will be fighting. To this must be added the personnel of the navies engaged—say half a million more men. If the war lasts long enough for five millions of these men to be killed, and if we add to these the total mortality of the preceding wars since the French Revolution, then the total mortality—ten millions—would equal the total tuberculosis mortality of the civilized world for the short period of ten years. It is hardly likely that so many as five millions of men will be killed in the present war, which figure would be all out of proportion with the mortality of the forty years of war between 1793 and 1914, which, as we have said, averaged 125,000 per annum; but even assuming that the mortality will be unprecedentedly heavy, and that the war will last several years, militarism exacts nothing like the unceasing toll of tuberculosis.

War, in other words, is a joke compared with tuberculosis. The latter is the greater anachronism. The best blood of the world is not being shed on the battle field, except in so far as we think of the sick room and the clinic as such.

Do we not, after all, have the one because we have the other? That is, the popular mind is attuned to the inevitability of both. If we are ever going to abolish one kind of warfare, why not abolish the other kind, too? Why have the one and not the other? Why tolerate the greater evil, tuberculosis, while we strive to stop the operation of what is almost like one of the windmills of Don Quixote in comparison? There is something the matter with our moral sense and social intelligence. There is something very rotten in Denmark, and human society continues to be what Bernard Shaw, with much justice, declares it to be—a practical joke of the gods.

The War of the Nations is costing at least fifty-five million dollars a day. When this war shall have lasted as long as the Franco-Prussian conflict, the cost will exceed five thousand million dollars. The wars preceding the present one, beginning with the French Revolution as before, cost $20,000,000,000. On the other hand, Huber estimates that tuberculosis costs the United States alone at least a billion of dollars a year.

The last-named author regards the tubercle bacillus as an index by inversion of the real progress of the race. By it, he says, the claim of civilization to dominate human life may fairly be judged. Tuberculosis will not decrease until civilization advances substantially.

The Dark Ages.

We are very proud of our hospitals, but we must not be blind to their shortcomings. Nor must we be blind to the fact that there are altogether too many people in hospitals. That, of course, is largely due to our bad economic and industrial systems. Bad housing, preventable occupational diseases, alcoholism and many other opprobria of the present social order account for many of our sins against the laws of health. The hospital itself often falls short with respect to the care of venereal cases, the insanities, decent privacy, the social service spirit, the spirit of charity in the case of those for whom the hospital receives no pay from the city or relatives, the segregation of children before admission to the wards until the incubation periods of the infectious diseases are passed, the care of contagious cases when they do develop, considerate and humane reception and tactful, kindly and private interrogation of applicants, the character and pay of orderly service, and on many other counts. Really we are still in the Dark Ages with respect to the hospital. But every year sees a nearer approach to what should be, and the ideals are not lost sight of by anyone.

The Department of Health.

The motives of the men now administering the affairs of the Health Department are most beneficent, and their methods based upon sound principles and practice. The Department is encountering opposition in its efforts to conserve the health of the people because it is acting on the assumption that the intelligence of those whom it would benefit is very high. How sound is this assumption?

The Department of Health cannot go much farther in its programme than public opinion is ready to sanction. That programme is a reasonable one; it does not flatter the people; it is our conviction that it is in accord with the people's intelligence and will be endorsed by them. It is certain reactionary elements in our mixed society that would penalize the Commissioner and his associates for daring to act upon a high conception of the people's requirements. If he acted in any other way than that which he is pursuing he would be betraying his trust.

Take the matter of preventing commercial interests from exploiting the sufferer from tuberculosis—the interests which sell him patent medicines with the implied or declared promise of cure or amelioration. The attitude of these ghouls was well exemplified by the attitude of one manufacturer with whom the writer recently discussed this question. What was the use, asked this enlightened person, of the Commissioner interfering with the activities of the commercial interests? Suppose the patent remedies were not sold to the tuberculous patient? Suppose he did go to the physician early? The physician could do nothing for him anyway! The medical profession, by every rule of reason, ought to consider themselves the natural enemies of the patent medicine conspirators; yet they are often found playing into the hands of these social menaces, who have no respect for them whatever, and no use for them save that which elicits dollars.

The Commissioner's assumption of high grade intelligence on the part of the people is sound. It exists, and it not only endorses the Commissioner but holds him to his oath of office. It means business and explains everything which the Commissioner has done. The commercial interests of low grade might as well begin to reckon with it too, and with the Commisioner's moral courage, with which important qualification he is fortunately highly endowed.

The Department of Health is doing things every day which a generation or less ago would have been considered autocratic, but which we of to-day accept as a matter of course. Indeed, if these very things were not done responsible officials would be impeached. The charge of autocracy is the last wheeze of discomfited or beaten reactionaries battening on the ills of the people and loath to leave their noisome sties.

Teacher-Mothers.

There is a disposition to regard the teacher-mother question as settled, in the light of Dr. Finley's recent decision. Our own feeling is that the question is barely opened up and the situation anything but clarified. Some people are so naive as to believe that there will be an increase of maternity among married teachers. In our judgment the birth-rate will not be affected, since there are few professional women who will sacrifice a year's salary (or is it two years') for the sake of increasing the population. In short, the bearing of children is still penalized, when a premium ought to be put upon it. The teacher must be either a sexual neuter or else establish precarious companionships. We have no use for either type. It should be possible for the teacher to lead a normal sexual and community life. She should be permitted to make herself the most valuable kind of a social asset, and when such a citizen reproduces her kind her salary should be doubled. Whatever loss there may be in the way of technical knowledge sustained through maternity is more than made up by what motherhood brings to a woman. What, after all, is any teacher worthy the name but a community mother? To the extent that she can realize actual, instead of academic, vicarious, pedagogic motherhood, are certain phases of her efficiency augmented. But the Finley decision settles nothing, for it provides that the teacher-mother may be dropped after her return to school for "general inefficiency," after test. Technical test, of course. The character of such tests, prescribed by reactionary officials, can readily be imagined.

Suppose, as a result of some great social service, involving the relinquishment of practice for one or two years, a physician should find that re-entrance upon his professional career was contingent upon a technical examination conducted by hostile inquisitors. Do we not know full well the futility of gauging a man's fitness to practice in such circumstances wholly on the basis of technical tests? And then suppose that that social service tended directly to enhance the physician's medical efficiency along certain non-technical lines. Who would have the effrontery to propose penalties for such a physician's civic and professional service?

Phthisiophobia and the Law.

The recent decision of Supreme Court Justice Blanchard annulling the marriage of Sarah and Joseph Sobol because the latter was suffering from an incurable attack of tuberculosis has excited various comments in the press on the part of certain medical publicists.

Dr. J. Wallace Beveridge has been quoted as saying that the decision reveals an inclination on the part of the law to work with the medical profession in preventing the spread of disease.

Knopf, however, points out that the courts must distinguish clearly between cases involving deception practised before marriage with respect to the existence of tuberculosis, and cases in which the disease develops in the course of married life. It would be inhumane and indeed incredibly cruel to encourage the separation of couples in the latter circumstances if proper treatment and conscientious precautions have been instituted. Knopf argues, and properly, that the careful consumptive is no more dangerous to associate with than any other person. It would seem that the alleged statement of Dr. Beveridge to the effect that there is danger in living in daily contact with a consumptive is calculated to spread the fatal curse of phthisiophobia. Whether the learned Justice's decision was so phrased as to apply to all cases of existing tuberculosis in husband or wife we do not know, but we agree wholly with Knopf that if that is the case it is most unfortunate.

Paradoxically enough, Dr. Beveridge is also quoted as saying that children are less liable to contract tuberculosis if one parent is tuberculous than if both parents are normal. As Knopf remarks, if this were true we should encourage the marriage of an actually ill tuberculous partner to a healthy one in order to have a non-tuberculous race.

The Eternal Element in Medicine.

In these, the days of medicine's greatest progress, are also witnessed the fiercest attacks upon the medical citadel. Whatever is suffered by individual physicians, medicine itself is impregnable. Aside from certain economic injuries, we can afford completely to ignore even the possibility of a breach in the citadel's walls. We fancy that sometimes our brethren of the profession are concerned for the interests of medicine, when they contemplate the forces arrayed against us, but their fears are wholly chimerical. Medicine is a tremendous thing, and no one knowing its real meaning, its history, its achievements and its essential relation to human society can do other than view with contempt the activities of its detractors.

It is to be regretted that the last of the medical superstitions has not yet passed away, and that the public are not yet as fully enlightened as we are ourselves with respect to the part that the physician should play in the medical scheme of things. Suppose that that happy state had been reached; what would the attitude of the sick man be toward his physician? The obvious answer to that question is, what is the attitude of the enlightened physician toward his medical attendant, when illness overtakes him? Does he expect him to perform therapeutic miracles? Does he expect him to drug him? Does he expect him to hypnotize him or perform any mysterious acts? Does he hold him accountable for clinical outcomes that are natural and unavoidable? Does he expect of him supernatural wisdom and prescience? For what does he look to his medical attendant? He expects to be observed through his pneumonia, after the diagnosis is established; to have his nursing, diet and sick-room hygiene carefully ordered and supervised; to have the very simplest therapeutic measures instituted upon occasion; to have his loved ones fully advised as to the actual clinical course of the disease; to have all necessary counsel taken and all required assistance secured; to have prophylactic precautions applied; to receive the psychical support needed; to feel that every physiological and defensive function is being carefully watched by a skilled and experienced observer, not necessarily in order that natural forces shall be coerced or augmented, but that the degree of their approach to competency shall be known. Medical intelligence asks no more. Would that lay intelligence demanded no more! What we have stated is the proper function of the physician. If he fulfills it what higher or more useful service could society demand? It is not within the realm of human possibilities to do more with respect to actually stricken individuals, social sanitation and hygiene being another story. It is popular misconception of the physician's real function, and popular underestimation of the tremendous value of that function, that accounts for all the maledictions of our enemies outside of ulterior considerations. For the sick man to have the service we have outlined is a boon inestimable—a service not eclipsed by any other here below. In the freak cults and systems men seek that which cannot be found on the footstool, deliberately and fatuously electing the ministrations of fools and crooks rather than a service rooted in law, sanity and science.

Brumser suggests that the slow healing of boils and carbuncles in diabetes is due to a want of alkalinity, or even an actual acidity, in the tissues. He has obtained good results by washing out the abscess cavities daily with a 5 per cent. solution of sodium carbonate.—(*Med. Klinik.*)

Miscellany

CONDUCTED BY ARTHUR C. JACOBSON, M. D.

The Diary of a Modern Pepys.

March 1.—Up betimes and wrote some pieces for THE MEDICAL TIMES which methinks will please Baketel and the subscribers. Thence to the clinics, where all the morning. Saw the dextrous Bailey at the Eye and Ear do a dozen Sluder tonsillectomies. Surely the last word in tonsil surgery. Thence to the German Hospital, where did witness Harris demonstrate the bladder lesions of the *Bilharzia haematobia,* never before seen in Brooklyn. At the College Hospital did marvel at the results of Morton's salvarsanized serum cases. Thence to St. Peter's, to see McGoldrick's artificial pneumothorax work. In the afternoon saw Arrowsmith treat tuberculous ulcers in the larynx under suspension laryngoscopy. In the evening to the County Society; listened in wonder and with sore misgivings to prophecies of a socialized profession. To bed late, after a bottle of ale with some choice spirits. Nightmare, in which did see myself in a pink uniform as a member of the State Medical Constabulary, pursued by a bureaucrat with orders for me to inspect Barren Island, and the month's salary check of fifty dollars.

The Relation of Contraception to Defeminization.

Duncan, of New York, in a recent article in the *New York Medical Journal,* has put a new kind of stick between the spokes of the eugenic wheel. He adduces a very plausible theory with respect to the eugenic influence of illicit sexual contacts. He believes that we are vastly influenced by the absorption, on the part of our sexual organs, of certain internal secretions of the opposite sex. Women are influenced by men, and men by women. He cites some experiments calculated to make one think that he has hit a new line of possibilities. He concludes that our progeny are tainted in this manner far more than has ever been suspected. We do not leave our sexual lapses behind us utterly; certain eugenic consequences remain. Take the common fact about high-bred bitches; cross them with mongrels and they become unfit for breeding purposes, for the yellow streak will appear in litters by the best of males. Analogous results have been noted in the human family. The red hair of a lover has appeared in children by the husband, and so on.

Duncan emphasizes the need on the part of each sex of the other sex's secretion, and finds in this need the explanation of sexual desire. Sexual desire is due to a tissue hunger for the internal secretions, but contacts must be wisely, not irresponsibly, made. By the internal secretion of the male the female is further feminized.

If all this is true we should expect to find the woman who is deprived of the internal secretion of the male approaching the neuter type. When we think of it, there appears to be a good deal in this theory. The unmarried woman who lives a barren sexual life certainly tends to take on characteristics that do not add to her feminine charms. That is a matter of common observation. Do not the married women who prevent conception tend toward a similar physical status? It is our observation that they do. They show what might be called deterioration; they lose hair and color; the secondary sexual characters are altered markedly, etc. If a woman has one or two children the later effects

of contraception are not so manifest, or at least are greatly postponed, for pregnancy above all things confers on woman her greatest womanliness.

All of which leads one to the conclusion that the present inexpediency of large families carries a severe penalty for the female sex; the greatest of penalties that women would wish to pay, something which may be roughly summed up as beauty. If this fact (?) were fully realized by women how would it affect their attitude toward the present social dispensation, which practically denies them full physiological development? How would it affect the feminist movement? One may suspect that a vague understanding of this matter is part of the motor force of that movement. The intuition of women is probably operative here, while the Duncans observe and theorize. Men would not submit to a curtailment of their sexual activities. Why should women uncomplainingly bear a sexual cross? Science may yet place this whole matter upon a sound footing and then we may expect an ultimatum from the feminist camp that will reduce mere man to his wit's end, put another puncture in the double standard, and smash the sophistries wherewith man bolsters up his selfish system of control. Women are demanding everything now of which man has cheated them in the vast, as for familiar example the vote, but such baubles as the vote are as nothing compared with that which is dearest to the feminine heart and mind—a full measure of pulchritude. Let contraception be once identified with the loss of hair, the acquisition of wrinkles and angularity, and defeminization in general, and we are lost!

Shortcomings of the Sanitary Code.

We are wholly in sympathy with the plan for issuing licenses to sell milk only to those who can survive a test calculated to assay the appicant's notions regarding cleanliness. But why limit this test to those handling milk? Why not include the chaps who preside over the saliva tanks called soda fountains? Why not include pharmacists who see no harm in washing the dog in the same sink in which graduates are washed and who wet with the tongue the two halves of a capsule to facilitate joining? Why not find out how often the barber novice bathes? And, most pertinent of all, why not an inspection of the finger nails of the gentleman who wants to be a surgeon or a dentist?

It is entirely within our power to set up standards for entrance upon all such activities. Let us regard making the license to the milk vender contingent upon cleanliness as merely an entering wedge.

Criminaloids.

If you happen to be defective and vicious, but very prosperous, you are not a criminal. Such people are often called captains of industry and philanthropists. Even if you are wholly without moral sense you may head great corporations, like the gentleman who, a few years ago, simply could not understand the resentment of the American people when it came out that it was a common practice with him to purchase legislation. You may shoot up your miserable mine workers in Colorado, but in New York you may head a great foundation for the promotion of all sorts of philanthropic enterprises and finance it with the surplus profits that ought to accrue to the workers so that they would not become objects of charity for the foundation to relieve.

Why are there no modified Binet-Simon tests for these people? Why are our researches confined to the poor? There is a wealth of clinical material spread before us, if only we would avail ourselves of it.

We trust that the Government Commission on Industrial Relations will be brave enough to label some of our criminaloids in the course of their labors.

The Coroners.

The proposal to abolish the Coroners' Office and substitute for it a medical examiners' office is a move in the right direction. It is about time that this old relic of feudal times was abolished and something modern installed in its place, and this altogether apart from alleged abuses. The system is indefensible even when administered by capable and honest officials, in the light of experience and progress in other American communities. Its defects are inherent. The legal work should be performed by the District Attorney's office and the police and the judicial duties by the City Magistrates. The medical examiners should be chosen after competitive civil service examination calculated to secure the services of experienced pathologists and bacteriologists, and their duties should be confined to ascertaining the physical causes of death. It would seem as though the great City of New York were in a fair way to have its crimes of violence properly investigated.

On Interns.

We suppose that less is said about that important personage, the intern, than any other medical fixture or appurtenance. We just take him for granted.

Well, a great deal could be said about him. It would be hard to answer some questions about him. As a matter of fact, he is a good deal of a mystery. Does the fact that we set no price upon his services mean that they are practically without value? Does he need to be humanized? Can he be humanized? We believe him to be important chiefly in a kind of clairvoyant sense, for we glimpse a large future for him. He is now an embryonic, transitional type of what is to be. He will occupy a considerable place in the hospital social service of the future. In this connection we may recall that it was at John Hopkins that the potential social service value of the student and intern was demonstrated even before Cabot's epoch-making work at the Massachusetts General.

If only an Ozanam could galvanize this great latent force; this inert force, we had almost said.

How many of the young men serving our hospitals think of their charges, not wholly as individuals, but in terms of the family—as only parts of family units, and to what extent do they inform themselves of the social-economic conditions relating to such units and all their parts? How far alive are they to the importance in their work of social as well as medical diagnosis?

Are their interests mainly limited to heart-block and the toilet of the peritoneum?

The Conservation of Sight.

The lectures at the Lighthouse for the Blind are a most commendable educational effort, and should go far toward the saving of sight, intended as they are not only for the blind, but for those in danger of losing their vision. The relations of proper hygiene, proper economic conditions, good lighting, fresh air and exercise to the conservation of vision are being set forth by experts. This propaganda, together with the efforts now being made by the Health Department in checking ophthalmia neonatorum, ought to be productive of great good.

Dave Lilly.

BY

JOYCE KILMER.

(Eugenists had better skip this.)

There's a brook on the side of Greylock that used to be
full of trout,
But there's nothing there now but minnows; they say
it is all fished out.
I fished there many a Summer day some twenty years
ago,
And I never quit without getting a mess of a dozen
or so.

There was a man, Dave Lilly, who lived on the North
Adams road,
And he spent all his time fishing, while his neighbors
reaped and sowed.
He was the luckiest fisherman in the Berkshire hills,
I think,
And when he didn't go fishing he'd sit in the tavern
and drink.

Well, Dave is dead and buried, and nobody cares very
much;
They have no use in Greylock for drunkards and loafers
and such.
But I always liked Dave Lilly; he was pleasant as you
could wish;
He was shiftless and good-for-nothing, but he certainly
could fish.

The other night I was walking up the hill from Wil-
liamstown
And I came to the brook I mentioned, and I stopped on
the bridge and sat down.
I looked at the blackened water with its little flecks of
white
And I heard it ripple and whisper in the still of the
Summer night.

And after I'd been there a minute it seemed to me I
could feel
The presence of someone near me, and I heard the hum
of a reel.
And the water was churned and broken, and something
was brought to land
By a twist and flirt of a shadowy rod in a deft and
shadowy hand.

I scrambled down to the brookside and hunted all about;
There wasn't a sign of a fisherman; there wasn't a sign
of a trout.
But I heard somebody chuckle behind the hollow oak
And I got a whiff of tobacco like Lilly used to smoke.

It's fifteen years, they tell me, since anyone fished that
brook;
And there's nothing in it but minnows that nibble the
bait off your hook.
But before the sun has risen and after the moon has set
I know that it's full of ghostly trout for Lilly's ghost
to get.

I guess I'll go to the tavern and get a bottle of rye
And leave it down by the hollow oak, where Lilly's
ghost went by.
I meant to go up on the hillside and try to find his grave
And put some flowers on it—but this will be better for
Dave.

A diminution of the pulse pressure means lessened velocity of blood flow, but the reverse does not hold good.

TESTS OF KIDNEY FUNCTION.*

H. H. MORTON, M.D.

CLINICAL PROFESSOR OF GENITO-URINARY DISEASES IN THE LONG ISLAND COLLEGE HOSPITAL, AND GENITO-URINARY SURGEON TO LONG ISLAND COLLEGE AND KINGS COUNTY HOSPITALS AND THE POLHEMUS MEMORIAL CLINIC, ETC.

Brooklyn, N. Y.

I have been asked to say something regarding the tests of kidney function. You may ask why it is that so much attention is paid at the present time in urological surgery to these tests. In all the medical journals one takes up we see references to them.

Most of the post-operative deaths in urological surgery are due to suppression of urine. We find in cases of long standing retention of urine, which always occurs in cases of stricture, stone and enlarged prostate, that there is a great deal of residual urine present. The residual urine is forced back on the pelvis of the kidneys and as a result of this continued back pressure, nephritis and pyelitis are invariably set up in the course of years. The symptoms of nephritis and pyelitis due to the back pressure on the kidney are very insidious. The patients, who are usually old men, complain of a slight evening rise of temperature, possibly one-half to one degree. They emaciate slowly and gradually. They complain chiefly of digestive disturbances and when they consult a physician they do so because they complain of heartburn and difficulty of digestion, and on looking at the tongue you find that it is dry, brown, cracked and fissured. The tongue in these cases of urosepsis is very characteristic, and it is a condition which is almost pathognomonic of these conditions.

The mental symptoms are also marked. The patient is dull and drowsy and shows no activity or interest in his affairs. He sits down and reads the newspaper, drops off to sleep, wakes up, walks about a little, and then goes to sleep again. Drowsiness is a constant sign of the general condition of these patients because the nerve centers of the brain are more or less blunted by the poison which is circulating through the blood. Frequent urination is always a concomitant of residual urine, and when the bladder becomes filled and overdistended the frequent urination becomes a real trouble. A few drops of urine escape every few minutes and the patient is constantly wetting his clothes. On examining the urine you find that it is loaded with pus and is alkaline in reaction. Albumen is always in excess of the amount that should be furnished by the pus when the kidneys are involved. That is an important point. You examine the urine in these cases and instead of finding a slight ring of albumen, just as soon as the kidneys are affected with nephritis or pyelitis you get a considerable quantity of albumen, and that is suggestive of kidney involvement in these cases of long-standing bladder disease. The toxemia from which these old men suffer is due to two causes: the absorption of toxins from the bladder, and imperfect elimination of urea by the kidneys. Any operative interference, no matter how slight even the passage of a catheter, may cause death in cases of this sort. In the more serious operations, such as litholapaxy and prostatectomy, they are almost surely followed by death unless means are taken to ward off this fatal result.

Any operative interference causes the kidneys to cease to functionate and the patient dies of septic anuria. When this condition sets in the clinical picture is very marked and very easily recognized. An old man with an enlarged prostate and full bladder comes into the doctor's office for relief. The doctor passes a catheter

* Clinical lecture at Long Island Hospital, Brooklyn.

and perhaps draws off all his urine (perhaps a couple of quarts. When he does that he very often writes the death warrant of the old man. What happens? The man goes home, has a slight chill with a moderate rise of temperature. He becomes slightly delirious, either dull or muttering or wild and maniacal. His tongue soon becomes dry and brown—the characteristic tongue of urosepsis. The abdomen is tymphanitic and distended. The urine becomes scanty and loaded with pus. The patient grows worse and the urine more scanty. The distention of the abdomen increases and the delirium gives way to coma, the pulse and respirations become more rapid, and, finally, the patient dies, overwhelmed by the poison. Death usually occurs in from four to seven days unless improvement takes place.

Improvement is first denoted by an increase in the kidney secretion, then the abdomen gets softer, abundance of gas is passed by rectum, the delirium improves, the temperature becomes normal and then the patient goes on to recovery, if he is so fortunate; but in old men with crippled kidneys and lowered resistance from extreme age, when the grave conditions I have described as accompanying urosepsis have started in, the result is generally death.

In making a prognosis before any bladder or kidney operation is performed the kidney functional tests and urinary examinations are of paramount importance because when we make our tests if we find that the kidneys are insufficient we say "Hands off! Don't operate on this case!" Can you improve the condition? We may and very often are able to do so by treatment, but if not, it is evident that the man is going to die from natural causes and it is better for him to thus die than from the knife of the surgeon; so in making our diagnosis and prognosis beforehand we are saved the unpleasant result of operating on cases which might have been better left alone.

If the kidney secretion is insufficient there are a few general rules of treatment which we may lay down:

First. Never empty a distended bladder at one sitting. Draw it off gradually. It usually takes a week to empty a bladder which is fully distended. A bladder which has been distended for months or weeks is flaccid and has very little contracting power, and a small quantity of urine should be drawn off several times a day. Finally, when we have the bladder empty and are able to keep it empty for a week or two, the congestion of the kidneys subsides and the function of the kidneys is resumed. All we can keep track of is the gradual restitution of kidney function by means of our kidney functional tests.

Second. Never operate without preliminary treatment on the long-distended bladder.

One word as to the preliminary treatment in these cases of prolonged distended bladder and generally in cases where the kidney function is insufficient. We carry on bladder drainage by means of a permanent catheter. Free drinking of water is forced and the patient should drink two, three or four quarts of water daily for the purpose of getting the kidneys to secrete freely. Water is the best diuretic and the patient cannot do harm to himself by drinking any quantity of water. By means of water we are able to bring up the urinary secretion and to increase the specific gravity and the excretion of urea so that it will be safe to operate after a sufficient amount of preliminary treatment. Urinary antiseptics, such as hexamethyelenamin and benzoate of soda, are valuable. The bowels should receive proper attention because colon bacilli collect in the large intestine and migrate from there to the bladder and increase the existing cystitis.

Third. Be extremely careful of the anesthetic. The favorite anesthetic to use in these cases is gas-oxygen with a little ether. Spinal anesthesia has been rather popular of late in some clinics, and it acts very well in these cases where the kidney function would be disabled by the necessity of eliminating the large quantity of ether which has been inhaled as an anesthetic.

The chief tests for the function of both kidneys taken together are the phenolsulphonephthalein and the indigo carmin. I will demonstrate those tests. You will observe these two patients. Dr. Raycroft will inject indigo carmin hypodermically into the buttock of this patient. The other patient we will use for the demonstration of the phenolsulphonephthalein test.

While waiting for them to take effect I will say a few words about each test. The phenolsulphonephthalein test was introduced to the profession by Rountree and Geraghty of Johns Hopkins, about three years ago. They found that this drug as injected here would, in a normal case, be eliminated within a few minutes so as to discolor the urine. The test is made by collecting the urine for the first hour and measuring the quantity of phenolsulphonephthalein which has been excreted during the first hour and then collecting the urine for the second hour and measuring the quantity of the drug which has been excreted during the second hour.

When the time of appearance of the phenolsulphonephthalein is delayed beyond 25 minutes, and when the output of the drug is below 20 per cent. for the first hour, it shows that the kidneys are not up to the necessary mark of secretion and any operative procedure which is undertaken is unsafe. We must postpone operation until we can get the kidneys up to 20 or 30 per cent. in the first hour and 20 to 40 per cent. in the second hour.

Indigo carmin is used in the same class of cases, but we find it a little different, because instead of depending on the percentage of the entire quantity we inject, we simply look for a strong blue discoloration of the urine. Normal kidneys excrete in 8 minutes. Any delay beyond that time indicates defective secretion on the part of the kidneys, so if the indigo carmin is delayed and if we find that the blue color of the urine does not appear for half an hour or more, we say that the kidney secretion is below par—it is diminished, and any operative procedure under such conditions is unsafe until we have improved the kidney function.

In order to determine the extent and percentage of the thalein secretion we have to depend on Dubosque's colorimeter.

In making both these tests the bladder must be empty at the time. We draw off the urine from the empty bladder and note the blue color with the indigo carmin, or we collect the discolored urine and measure it afterwards with the colorimeter. I will show you the colorimeter and how it works:

Here is the standard solution in this wedge. There is a wedge-shaped glass, and, of course, where the solution is thin in the lower part of the wedge, we have a light color, but as the wedge grows wider, we get a darker color. Here is a scale reading from 0 to 100. The urine to be tested is put in that and by means of this little screw, which draws the wedge, we read off here until we get the urine and the control of the same color. We will say, for instance, that this urine answers this shade of control. This reads 40 on the scale. That means 40 per cent.

Indigo carmin is a much simpler test to make and does not require the length of time or the apparatus that the phenolsulphonephthalein does. All we do in the indigo carmin test is to watch the urine until it is blue, and if

it comes in 8 minutes we say, "Yes, the kidney function is of full capacity."

In our interest in the functional kidney tests we are sometimes apt to lose sight of the importance of the old standard urinary examinations which will really show almost as much as the functional tests, provided we read them rightly. The things of much importance in urinary examinations with reference to the functional capacity of the kidneys, when we come to take up the question of operation, are the specific gravity and urea. In cases where the excretion is deficient there is always, in these operative cases, a large amount of urine of a watery character poured out. The reason for that is because of the fact that the kidneys are not secreting sufficiently and in order to eliminate a sufficient quantity of urea they must get rid of a large amount of water; so with a specific gravity of 1004 to 1008 and 80 or 100 ounces of urine a day, you find only 3 or 4 grains of urea to the ounce, and we can say from those findings that the kidney function in a given case is imperfect; that it is unsafe to operate; and when, in addition to that, we have delayed indigo carmin or lessened phenolsulphonephthalein output, we take all those factors together and say, "This is not a case for operation at the preent time. We must keep hands off until we are able to improve the functional capacity of the kidneys."

You see we are getting blue from this man. Notice the blue color. Do you see the change? It took 9 minutes. Eight to 10 minutes is normal. In a couple of minutes that will get a stronger blue. We will put this man to one side and I will show you the thalein man after it has had a chance to collect a while.

That is all I want to say about the functional kidney tests where we collect the urine from both sides at the same time by means of a catheter lying in the bladder and that applies to those cases of disease of the bladder or prostate where we are considering operation. I want to turn to another branch of the subject and say a few words about the tests as applied in kidney surgery.

In modern kidney surgery the operative mortality ranges about 9 per cent., whereas 20 years ago the mortality after kidney operations would range from 36 to 52 per cent. What has brought about the change in the operative mortality? This great reduction in the mortality is due to our ability to catheterize the ureters and to know positively whether the disease is located in the right or left kidney, and at the same time to know the condition of the other kidney. It is not enough to know which kidney is diseased. We must also know what the condition of the other kidney is. If we locate the disease in the right kidney we must know if the left kidney is healthy and capable of supporting life, and if it is we can operate safely. The functional kidney tests are applied in these cases.

In cases of suspected disease of one or both kidneys there are four methods of making functional tests. In all of them the ureters are first catheterized and the right and left urines are compared. Dr. Raycroft took this patient in the anteroom just before the clinic and catheterized the right and left ureters, and now you see these catheters lying in the right and left sides. We will now inject indigo carmin into this patient, and if both sides are normal the indigo carmin will appear simultaneously on both sides. If there is marked disease on one side, the excretion of indigo carmin on that side will be delayed.

Now to take up the four methods which we have for comparing the functional activity of both kidneys. The ureters are first catheterized and the right and left urines compared. It is a very important matter to compare the excretion of urea from the right and left kidneys. If we find an equal excretion of urea on both sides (in the neighborhood of 8 or 10 grains to the ounce) we say that both kidneys are normal and functionating properly. Rovsing, of Copenhagen, who has done a great deal of work on the kidneys, depends very largely on the percentage of urea from the right and left sides, and we find that here in Long Island College Hospital it is a very reliable method.

The second is known as the phloridzin test. Phloridzin injected hypodermatically causes the excretion of sugar. It is injected into a patient and the urines are compared after being collected by ureter catheter. If there is a high sugar output, say 1 per cent. on both sides, it means that both kidneys are healthy, while if there is a low sugar output on one side, it shows a lack of secreting power on the part of that kidney and consequent disease. The phloridzin test is not used as much as the others because it is more difficult

The third is the cryoscopy test, and that is done by comparing the relative freezing points of the two urines. This test is very uncertain and difficult to carry out, and has been practically given up in nearly all of the clinics with the exception of one or two where it originated and where it is done for the purpose of demonstration more than anything else.

The fourth method of comparing the functional kidney capacity is the chromo cystoscopy test or the indigo carmin, the indigo carmin being injected for comparison of the right and left kidneys. Indigo carmin is the most valuable test that we have. It was first discovered several years ago by Völcker and Joseph, assistants to Bier at Bonn. Joseph is now in Berlin and has the urological clinic in the Surgical Hospital in the Ziegel Strasse. Indigo carmin has now been adopted in every one of the urological clinics in Europe for the purpose of determining the relative functional capacity of each kidney. The drug is injected hypodermatically and in a normal kidney the urine will come blue in 8 to 10 minutes. If we find that the blue returns in 8 minutes on one side and on the other side the blue does not return until 20 minutes we say that the kidney which excreted in 8 minutes is all right, while the other one is diseased. In practice I have done I do not know how many indigo carmin tests and I have never found it to fail.

There are two ways of applying this chromo cystoscopy. If we can inject the indigo carmin and put a cystoscope into the bladder and watch the two ureters, and if we get a swirl of blue on one side or the other in 8 minutes and do not get the blue on the other side in 20 minutes, we say that the side from which the blue came in 8 minutes is the healthy side, while the other and delayed side is diseased. It is a simple method and a very accurate one, and, as I say, I have never found it to fail. The phenolsulphonephthalein test can also be used for the same purpose, but the trouble with that in the cases where we want to compare the function of the two kidneys is that the urines must be collected for one and two hours, and holding the catheters in place is painful and uncomfortable, and the phenolsulphonephthalein test is no better than the indigo carmin in kidney work, although the former is an excellent method for testing the secretion of both kidneys together. To summarize, then, in addition to my general urinary examinations for the purpose of determining the specific gravity, urea, etc., in cases of prostate, stone in the bladder and stricture where there is residual urine and where I want to get a knowledge of the function of both kidneys together, I prefer the phenolsulphonephthalein test, but where I want to differentiate the function of the two kidneys, I prefer the indigo carmin.

32 Schermerhorn Street.

Diagnosis and Treatment

Hyperthyroidism.

Sir James Barr says this disease is more frequent in females. In amenorrhea, there is not only defective thyroid secretion, but also deficient lime salts in the blood; whereas, in dysmenorrhea, the thyroid inadequacy is usually associated with excess of lime salts. In both cases, thyroid extract is useful, but in the first a liberal allowance of lime salts should also be given, and, perhaps, the best salt in such cases is the iodide of calcium. In dysmenorrhea, decalcifying agents are often useful.

The thyroid gland is, as a rule, much more active in the female than in the male, and plays a very considerable part in the characteristics of the two sexes. The female is sharper witted, more voluble, and less stable. A women often jumps to a conclusion without any process of reasoning, but simply by intuition she gets there, sticks there, and no process of reasoning will convince her that she is not right. The thyroid metabolism has much to do with this process; women of the more reasoning type have their suprarenals as well, or perhaps more, developed than their thyroids, and present other masculine characteristics.

Women are not so liable to arteriosclerosis as men, because they eat less, are more temperate in all things, and do not lead such a strenuous existence. Moreover, the thyroid gives rise to active calcium metabolism, the blood-pressure is lower, and, as Blair Bell has shown, they get rid of a good deal of calcium at each menstrual period. When arteriosclerosis does arise in women, apart from kidney disease, it chiefly occurs in those who have borne large families, and have had long continued high arterial tension with calcium retention. Emotional disturbances frequently occur in women, and emotion acts like suddenly turning a stop-cock in a water pipe connected with the main; it sets up waves of pressure, the chief stress of which is thrown on the aorta. In such cases, aortic dilatation is very common. In the early months of pregnancy, the thyroid is active as a rule, and so we get rapid calcium metabolism; an extra supply of lime salts may be demanded to correct headaches, and other disturbances. A typical case of exophthalmic goitre occurring in pregnancy requires very careful treatment, and at parturition an hypodermic injection of pituitary extract should be ready to check hemorrhage.

Belladonna is supposed to lessen the secretion; digitalis has not much effect in lessening the frequency of the pulse, though it is useful where the heart is dilated and blood pressure low, but in such conditions Barr prefers small doses of putuitary extract. The *x*-rays have an effect in lessening the function of the gland, and the continuous current has occasionally been found useful. The remedies on which he most relies are the calcium salts, and the suprarenal gland.—(*Practitioner*, April, 1914.)

Thermoprecipitin Reaction in the Diagnosis of Pulmonary Tuberculosis.

Fraser, of Glasgow, writes on the simple method for the diagnosis of phthisis by examination of the sputum for thermoprecipitins has been proposed by Fagiuoli. It is based on the reaction of Alberto Ascoli, which has been so successful in veterinary practice for the diagnosis of anthrax, and is now employed by the German and Belgian Governments. In the anthrax experiments, extracts are made of organs, from suspected animals. A small quantity of the filtered extract is put into a tube, and a few drops of an anti-anthrax precipitating serum are gently added. If the suspicion of anthrax is correct a precipitate is seen to form at the line of contact of serum and organ extract.

Fagiuoli endeavored to prove that analogous substances exist in the sputa of phthisical patients. He began by making extracts of the sputum with ether, toluol and antiformin, but none of these gave satisfactory results. Finally, he turned to chloroform, which Ascoli had used in his original procedure for the production of extracts from anthrax spleens, and with this obtained very good results. The following are Fagiuoli's instructions for carrying out the test: To a certain quantity of sputum (5-10 c.c.) double the quantity of chloroform is added. The mixture is well stirred up, and put in the incubator at 37° C. for 3-4 hours. The chloroform is then decanted, and replaced by the same amount of normal saline solution. After 2-3 minutes of vigorous shaking, a homogeneous emulsion, of a white, milky appearance, is obtained. This is filtered through a Schleicher u. Schüll paper, No. 490. If the filtrate is cloudy or even slightly opalescent, the filtration is repeated through asbestos. The experiment is carried out in small test tubes (2.5 c.m. by 0.1 c.m.). The tube is filled to about half with precipitating serum and then carefully, with a capillary pipette, a few drops of the sputum extract are run on to the surface. The contact must not be quick or vigorous. The tubes are put for 20-30 minutes into the incubator at 37° C., and the result is then read off. The result is regarded as positive if, during the 30 minutes after the test is put up, a white precipitation ring appears at the junction zone. Fraser left the sputa overnight in contact with the saline at 37° C., as a more homogeneous, and more easily filtered emulsion was thus obtained.

Eighty-six sputa were examined, of these 42 were definitely tuberculous and 39 were non-tuberculous (clinically and bacteriologically); 5 were of doubtful diagnosis.

Of the 42 tuberculous sputa, 36 gave a positive reaction, i. e., 86 per cent.

Of the 39 non-tuberculous sputa, 27 gave a negative reaction, i. e., 69 per cent.; 1 gave a doubtful reaction.

Of the 5 cases of doubtful diagnosis 4 gave a positive and 1 a negative reaction.

It is especially noteworthy that in 5 cases which were definitely tuberculous, but where no tubercle bacilli could be found in the sputum, a positive reaction was obtained.

The reaction appears to have some clinical value; a negative result speaks strongly against a diagnosis of tuberculosis. In this reaction, however, as in all immunity reactions so far proposed for the diagnosis of tuberculosis, the statistics show the lack of absolute reliability, due in the first place to the fact that in any list of cases diagnosed clinically as free from tuberculosis, there is probably a certain percentage in which the infection is in reality present; and, in the second place, to the inconstancy of all tuberculous antibodies —an inconstancy which has been noted of agglutinins, precipitins, opsonins and complement-fixing immune substances.—(*The Practitioner*, March, 1914.)

Arthritis, unlike gout, is not characterized by excess of uric acid in the blood.

The American Association of Clinical Research

JAMES KRAUSS, M. D., Permanent Secretary and Editor.

CLINICAL OBSERVATIONS OF SOME CARDIO-VASCULAR STIMULANTS. SERIES III.

FRITZ C. ASKENSTEDT, M.D.,
Louisville, Ky.

(Concluded from February number.)

Conjoined Clinical Test.

Case XXI. Cervical Rib. Epilepsy.—Atropine Sulphate. Fred. G., 8 years of age. Attends school. Height 4 ft.. 1 in. Weight 50 lbs.

Family History: Father in fair health. Mother subject to uterine trouble and was always nervous. Two brothers and two sisters living, all more or less neurotic.

Personal History: About three years before this test his mother noticed a small, hard protuberance in left side of his neck, which proved to be a supernumerary rib attached to last cervical vertebra. Left subclavian artery was felt pulsating under the clavicle and above the cervical rib, which in the skiagraph seemed attached by a cartilege to first dorsal rib. Patient was vaccinated in January, 1910, which was followed by a very bad arm. During the last nine months he had been subject to epileptic seizures—fifteen in all. These attacks occurred during the day, beginning with a nervous-restlessness and a faint outcry. The convulsions were general and followed by sleep for several hours. The patient was nervous and easily irritated, otherwise appeared well.

Physical examination failed to reveal anything abnormal in the abdomen. The prepuce, though somewhat narrow, was successfully retracted, and no adhesions were seen. Chest diameters, 5 by 7 inches. Circumference, 22 inches. No evidence of pressure on brachial plexus of nerves, and no murmur in left subclavian artery. Heart: Apex beat not visible and barely palpable in nipple line, 2¼ inches from midsternum. There was a faint mitral murmur, heard more distinctly when the patient was lying than when sitting. Second pulmonary sound was accentuated. Polygraphic tracings showed an a-c interval of fully 1/5 second in length (see Fig. 2), which suggested pneumogastric irritation from indirect pressure of the cervical rib. Ably assisted by Dr. B. F. Underwood, of Louisville, May 31, 1912, a test with atropine was undertaken, and the following notes were made conjointly:

Hours.	*Systolic Tension.*	*Pulse.*
3.35 p. m.	..	98
3.38	85	..
3.40	..	97
3.42	86	..
3.44	..	90
3.47	86	..
3.48	..	90
3.50	86	..
3.52	..	89
3.54	86	..
3.56	..	90
3.58	85	..
3.58	1/50 gr. atropin sulphate injected hypodermatically.	
4.00	..	89
4.02	85	..
4.04	..	89
4.06	86	..
4.08	..	87
4.11	87	..
4.13	..	88
4.15	86	..
4.20	..	110
4.22	89	...
4.24	..	112
4.26	90	...
4.28	..	115
4.30	91	...
4.32	..	118
4.34	88	...
4.36	..	120
4.38	90	...
4.40	..	118
4.42	88	...
4.45	..	116
4.47	88	...
4.51	..	118
4.53	86	...
4.55	..	112
4 57	87	...
5.00	..	108
5.03	..	108
5.06	..	108
5.11	..	108

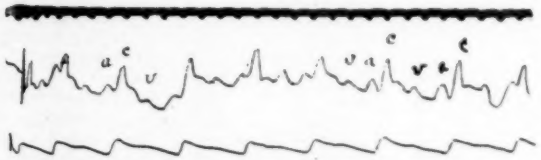

Fig. 3. Jugular and radial tracings made before the injection of atropin.

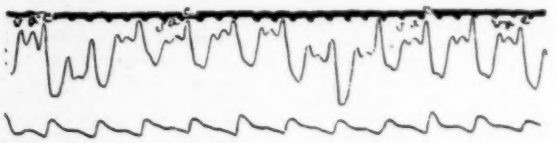

Fig. 4. Tracings made during the cardiac stimulation by atropin. In comparison with Fig. 3 note the greater rapidity of the pulse and the shorter *a-c* intervals—increased conductivity of the auriculo-ventricular bundle.

The effect of atropin upon the circulation in this instance was decided, and its inhibition on the vagi typical. In twenty-two minutes from the time of the hypodermatic injection the pulse manifested a marked acceleration, reaching its culmination sixteen minutes later, while the increased heart action continued until the end of the experiment. The a-c interval showed a decided shortening (see Fig. 3), and about the time of the greatest cardiac activity the blood pressure reached its highest degree of elevation—6 mm.—subsiding, however, more quickly than the pulse rate.

A statement from Dr. Underwood will be seen below:

I assisted Dr. Askenstedt in the examination of the case with cervical rib, which was subjected to a test with atropin, and my observations were just as those he has recorded. It is my opinion that the increase of pulse rate and blood pressure was due mainly to the action of atropin.

B. F. UNDERWOOD.

Case XXII. Aortic and Mitral Regurgitations.—Strophanthin.—A. P., aged 39. Negro. At the age of 15 had syphilis in a mild form, and since then has had a number of attacks of gonorrhœa, the last of which was contracted six or seven years ago. Has been subject to "rheumatic pains," but not severely enough to confine him to bed.

Present illness began two years ago with cough and dyspnœa, but no pains. July 29, 1914, he was admitted to the Louisville Public Hospital, presenting slight dropsical swellings of the feet.

On physical examination, August 14, marked pulsations of the subclavian and radial arteries were noticed. There was a slight epigastric pulsation; an increased area of liver dullness could not be made out. Oedema of the lower extremities extended half way up the legs. The apex beat of the heart was plainly visible in the fifth interspace, 4 inches to the left of the midsternal line. Relative dullness extended 3½ inches to the left and 1 inch to the right of this line. A diastolic murmur, with greatest intensity in the third left intercostal space, close to the sternum, was noted; and a feeble systolic murmur could also be discerned just inside apex beat, but the second pulmonary sound was not marked by accentuation. There were subcrepitant râles in both lungs, especially in lower left lobe. Since the patient's admission to the hospital the temperature had varied from 97 to 98.6, pulse from 108 to 132, and respiration 24 to 54, with increasing dyspnœa.

Besides an occasional laxative, his medication consisted of 1 dr. tr. digitalis t. i. d. from August 5 to 8, 1½ dr. August 9 to 12, and August 13, the day before the test, 25 drops of tr.

strophanthus t. i. d. was substituted for the digitalis. Notwithstanding the heavy drugging, the pulse rate did not show a decided reduction, and the a-c interval of the jugular tracings did not exceed 1/5 of a second in length. At 4 p. m. the pulse was 116, systolic blood pressure 136, diastolic 34 (auscultatory method).

Having made the above physical examination conjointly with Dr. J. Rowan Morrison, Adjunct Professor of Clinical Medicine of the University of Louisville, we administered intravenously 1 mg. strophanthin at 4.08 p. m., and the following observations were thereafter noted:

Hours	*Systolic Tension.*	*Diastolic Tension.*	*Pulse.*
4.13 p.m...	...	..	119
4.14	...	40	...
4.17	...	..	120
4.25	138	40	...
4.27	...	..	119
4.33	...	..	118
4.37	...	..	119
4.38	138	44	...
4.51	...	..	121
4.54	154	52	Patient moaning and nauseated.
5.10	160	50	...
5.30	...	46	...

Polygraphic tracings showed the pulse to be regular in rhythm, both before and after the injection, and there was no perceptible lengthening of the a-c interval produced by the strophanthin. Estimating the pulse rate by the time-marker of the polygraph in use, to supplement the above infrequent counts of the radial pulse, a sudden increase followed by a gradual reduction was observed:

Pulse rate before injection of strophanthin, 117.
Pulse rate during first half hour after the injection, 123.
Pulse rate at 4.30 p. m., 122.
Pulse rate at 5.00 p. m., 121.
Pulse rate at 5.15 p. m., 120.

The t. i. d. doses of 25 drops tr. strophanthus were renewed the next day, but on account of nausea and vomiting, all heart stimulants were withdrawn in the afternoon of August 16. The patient suddenly expired at 5 a. m., August 17.

Orthepnœa and discomfort of the patient greatly embarrassed the examination with the sphygmomanometer and the polygraph, and, no doubt, had a varying influence upon the pulse rate. The augmented heart action after the injection was probably due to a dread of the procedure and a moderate pain occasioned by the injection. This cannot, however, account for the slower rise of blood pressure, which seems to be the result of the vasomotor action of the drug.

Commenting on the case, Dr. Morrison writes:

All my observations on this case were the same as Dr. Askenstedt's, except I would not have read the diastolic tension as low as he did. In fact, I was undecided how to read this exactly by auscultation, as the man had an aortic murmur.

J. Rowan Morrison.

Case XXIII. Chronic Interstitial Nephritis. Cerebellar Disease.—Camphor.—Mr. J. K., aged 51. German. Had been a heavy beer drinker, but used very little whiskey or tobacco, and was addicted to no drug habit. Denied any venereal disease. Had measles, but no other eruptive disease as a child. At eight or ten years of age he suffered an attack of rheumatism, which confined him to bed; fifteen years ago he was affected with erysipelas, and three years later had another attack of rheumatism.

His present illness dates back six years, when he began to feel dizzy and to suffer from headaches at base of brain. These symptoms have since continued at intervals, and he has grown very emotional, frequently crying without apparent cause. Appetite and digestion were good, but his bowels were constipated. There was no vomiting.

Physical examination revealed no abnormal sensation of the skin, but a marked dermatographia rubra was elicited on the chest and abdomen. The eye reflexes proved normal; no nystagmus was present. Abdominal, epigastric, scapular and cremasteric reflexes were absent. Achilles and plantar reflexes normal. Patellar increased. Babinski's toe reflex slightly positive, but there was no ankle clonus. Co-ordination of the left hand and arm was distinctly impaired; but that of the feet seemed normal. His gait showed a degree of ataxia not sufficiently marked to be characterized, and Romberg's sign was positive. On pressure there was some tenderness of the third and fourth dorsal vertebræ, but of none of the intervertebral foramina. The anterio-posterior curvatures of the spine were somewhat exaggerated. Examinations of the heart showed the apex beat in the fifth interspace, 4 inches from midsternum, moderate in force. Relative dullness 3¾ inches to the left and 1 inch to the right of midsternum. Absolute dullness 2 inches to the left. There was a systolic mitral murmur, when the patient was lying or sitting, but the second pulmonary sound was not accentuated. When lying, aortic pulsation was palpable in the suprasternal fossa. The dullness in the first and second interspaces was normal. An occasional extrasystole was heard. The radial and temporal arteries seemed normal in size, and compressible. Liver dullness was normal. The spleen was not palpable during deep inspiration. Examination of the lungs proved negative. The urine was of low sp. gr., and contained a trace of albumen and some hyaline and granular casts, but was free from sugar.

Since his admission to the Louisville Public Hospital, eleven days before the test, the temperature had varied between 98-100, the pulse between 88-130, and respiration between 22-26. His systolic blood pressure was found 185-196, and diastolic about 120, determined by auscultation.

September 29, 1914, the following test was carried out with camphor, in which experiment I was ably assisted by Dr. W. S. Carter, resident physician of the hospital:

Hours	*Systolic Tension.*	*Diastolic Tension.*	*Pulse.*
3.10 p.m...	198	110	...
3.25	198	110	...
3.45	...	...	104, including extra systoles.
3.47	198	115–120	...
3.48	...	115	...
4.00	199	...	...
4.03	6 grs. camphor, in 4 c.c. olive oil, injected hypoderm.		
4.06	...	...	105
4.10	203	...	...
4.14	...	120	...
4.15	...	120	...
4.16	...	...	106
4.22	204	122	107
4.35	205	122	108
4.42	...	...	106
4.44	205	125	...
4.46	...	...	105
4.50	203	125	...
4.55	195	About 120	...
4.58	...	...	105
5.02	193	117	104
5.06	...	...	105
5.07	198	120	...

On account of the extrasystoles occurring during the test and the restlessness of the patient, accurate estimates of blood pressure were made with difficulty, to which is due the irregularity of the blood pressure curves following the administration of the drug.

Polygraphic tracings were taken before and after the test, exhibiting a number of ventricular extrasystoles. While the character of these extrasystoles was not altered, there was a distinct decrease in their number after the administration of camphor, as follows: 500 pulse beats before the exhibition of camphor included 74 extrasystoles, or 14.8 per cent.; whilst 700 pulse beats after the injection revealed but 61 extrasystoles, or 8.7 per cent. The smallest number of extrasystoles were seen between 4.30 and 4.33 p. m., corresponding to the most rapid pulse rate and the highest systolic blood pressure, but since the distribution of the extrasystoles was somewhat irregular throughout the experiment, this may have been merely a coincident. A point of interest is a slight shortening of the a-c interval following the use of camphor, as will be seen from Figs. 5 and 6.

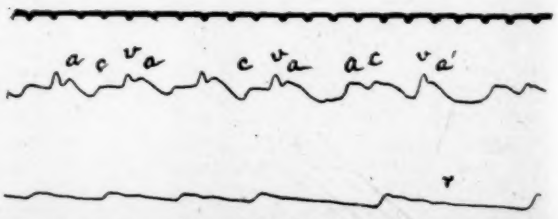

Fig. 5. Tracings before the administration of camphor.

Fig. 6. Tracings taken during the action of camphor. Comparing the *a-c* intervals with those of Fig. 5, note a trifle shortening under camphor.

In the above case it will be seen that some minutes after the hypodermatic injection of 6 grs. camphor in olive oil, the systolic and diastolic blood pressures and the pulse showed a slight increase, while the preceding number of ventricular extrasystoles was reduced, and the a-c interval, previously somewhat lengthened (possibly due to the moderate doses of digitalis taken), became appreciably shorter. These changes reached their culminating point almost simultaneously, in about one-half hour after the administration of camphor, and together gradually subsided until the normal condition was restored about twenty minutes later. Estimating the amount of circulatory stimulation by multiplying the pulse-pressure with the pulse rate, which in this instance increased from 8,112-9,152 to 9,964, we find a distinct, though small, acceleration. If under the difficulties that confronted us in estimating the diastolic pressure we may admit for consideration this phase of the blood pressure, it will be seen that the smaller blood vessels were subjected to a stimulation that outlasted the accelerating effect upon the heart. The increased pulse beats and the shortened a-c intervals of the jugular tracings, would lead us to infer that the action upon the heart was one either of stimulation to the cardio-accelerator system or else paralysis of the vagus. In the absence of convincing animal experiments, the action of camphor upon the cardiac structures remains unknown.

For the purpose of complying with the requirement of a conjoined test, the following statement of Dr. Carter is added:

On September 29, 1914, I had the pleasure of assisting Dr. Askenstedt, who at that time was visiting physician for my wards, in making a test as to the effect of camphor on the circulating system.

The patient selected for the test, Mr. J. K., had been under my care for eleven days at the hospital, and I had had an opportunity of observing him at intervals for several years previously. He came to the hospital to be treated for his nervous manifestations.

The physical examination made on his admittance to the hospital agrees with that made by Dr. Askenstedt. A negative Wassermann was obtained on the blood and spinal fluid. Examination of the spinal fluid showed a normal cell count and no excess of globulines.

During the patient's stay at the hospital his blood pressure was taken a number of times both before and after the test. It ranged from 185 to 196 mm. of mercury. It can be seen that following the injection of camphor a systolic pressure of 205 was recorded, an increase of 7 mm. An increase of 10 mm. in the diastolic pressure and a slightly accelerated pulse were likewise observed. Another point of interest is the lessened number of extrasystoles, shown by the polygraphic tracing, following the exhibition of the drug.

Considering the fact that the systolic pressure during the patient's stay at the hospital at no time, except during the test, reached 200 mm., it would seem that the heightened blood pressure must have been due to the camphor.

W. S. CARTER.

Summary.

The following summary includes the cases of my previous reports published in the *Lancet-Clinic*, Dec. 17, 1910, and Jan. 27, 1912:

Adrenalin extract (1 to 1,000).—1 c.c. adrenalin chloride, hypoderm., in case xiv of asthma, with normal blood pressure. *Result:* While the paroxysm of asthma was at once arrested and the pulse rate slightly increased, there was no influence observed upon the blood pressure.

1 c.c. adrenalin chlor., hypoderm., in late stage of Hodgkin's disease, with low blood pressure, case xv. *Result:* Doubtful.

1 c.c. suprarenal extract, hypoderm., in case of diabetes, with low tension, case xiv. *Result:* Prompt rise in blood pressure and pulse rate, with production of extrasystoles.

1 c.c. adrenalin chlor., hypoderm., in same case a month later. *Result:* Prompt rise in blood pressure and pulse rate, and extrasystoles as before.

1 c.c. adrenalin chlor., hypoderm., in case of pulm. tuberculosis, case xvii. *Result:* Increase of blood pressure and probably also of pulse rate.

1 c.c. adrenalin chlor., hypoderm., in epilepsy, case xviii. *Result:* Marked rise in blood pressure and pulse rate, which became irregular.

Ammonius carbonate.—10 grs., per orem, in complete heart block, case vi. *Result:* Negative.

Atropin sulphate.—1/100 gr., hypoderm., in advanced stage of arthritis deformans, with moderately high blood pressure, case x. *Result:* Reduction of blood pressure.

1/100 gr., hypoderm., repeated in case x. *Result:* Same as above.

1/100 gr., hypoderm., in last stage of transverse myelitis, with low blood pressure, case xii. *Result:* Negative.

1/50 gr., hypoderm., in mitral regurgitation, with auricular fibrillation (?), the patient having previously taken small doses of digitalis and apocynum, case xiii. *Result:* Negative or slight lowering of blood pressure.

1/50 gr., hypoderm., in probable senile cardio-sclerosis, with mitral regurgitation and ventricular extrasystoles, case xx. *Result:* A slight rise in pulse rate, systolic and diastolic pressures, and an increase in per cent. of extrasystoles.

1/50 gr., hypoderm., in case xxi of cervical rib and epilepsy. *Result:* Considerable increase in pulse rate, slight increase in systolic blood pressure, and marked reduction in a-c interval.

Amyl nitrite.—By inhalation in complete heart block, case vi. *Result:* Very slight increase in number of ventricular systoles, a relatively greater activity of the auricles—auriculo-ventricular rhythm before the use of amyl nitrite, 3.2 to 1; after its use, 3.5 to 1.

Camphor.—2 grs., hypoderm., in advanced case of fibroid tuberculosis, with the low blood pressure, case xix. *Result:* Doubtful.

6 grs., hypoderm., in probable senile sclerosis, with mitral regurgitation and high blood pressure, case xx. *Result:* Negative.

6 grs., hypoderm., in chronic interstitial nephritis and cerebellar disease, with high blood pressure, case xxiii. *Result:* Slight rise in pulse rate and systolic and diastolic blood pressures, and a lessened per cent. of ventricular extrasystoles, whilst a-c intervals seemed shortened.

Digitalis (Digalen).—10 drops Digalen t. i. d. in myocarditis, with mitral regurgitation and moderately high blood pressure, case v. *Result:* Reduced pulse rate.

8-10 drop doses (Digalen) t. i. d. in myocarditis with double extrasystoles, case vii. *Result:* Restoration of normal rhythm to the heart conclusively demonstrated, with a slight lowering of normal blood pressure.

Nitroglycerin.—1/25 gr., hypoderm., in chronic nephritis with high blood pressure, case ii. *Result:* Blood pressure reduced 18 mm., more or less reduction continuing about an hour.

1/25 gr., hypoderm., in chronic nephritis with high blood pressure, case iii. *Result:* Pressure reduced 24 mm., with more or less reduction of pressure for 1½ hours.

3/100 gr., per orem, in myocarditis with impaired conductivity of the auriculo-ventricular bundle, case v. *Result:* A reduction of 10 mm. or over in blood pressure.

1/50 gr., per orem, in complete heart block, with high blood pressure, case vi, series i. *Result:* A fall of blood pressure of not less than 20 mm.

1/50 gr., by mouth, repeated in same case had no effect on pulse, but lowered blood pressure 25 mm.

1/50 gr., hypoderm., repeated a second time a year later, showed no effect on pulse or on auriculo-ventricular rhythm (case vi, series ii), but reduced pressure 7 mm.

1/25 gr., hypoderm., in same case (vi, series iii), effected a reduction of blood pressure of 10 mm. or more.

1/50 gr., hypoderm., preceded by a hypodermatic injection of 1/30 gr. strychnin sulphate, in acute rheumatic arthritis, with normal blood pressure, case xi. *Result:* 15 mm. fall of blood pressure, but no influence on pulse.

1/50 gr., hypoderm., repeated the next day without strychnin, reduced blood pressure 15 mm.; again no effect on pulse.

1/50 gr., hypoderm., preceded by a hypoderm. dose of 1/30 gr. strychnin, in late stage of transverse myelitis, with low blood pressure, case xii. *Result:* Reduction of pulse rate 10 beats or more for a few minutes only while the blood pressure was lowered 25 mm., more or less reduction of pressure lasting about an hour.

1/50 gr., hypoderm., repeated in same case, without the strychnin, reduced the pulse rate 40 beats for a transient period (less than 5 minutes), and lowered blood pressure 24 mm.

1/50 gr., hypoderm., repeated a second time, without strychnin, reduced pulse 37 beats for a similar brief period and lowered pressure 31 mm.

Pituitary extract (Infundibular, 1 to 100).—1 cc., hypoderm., in last stage of pulmonary tuberculosis, case xvii. *Result:* Negative.

Strophanthin.—1 mg., intravenously, in aortic and mitral regurgitation, case xxii. *Result:* A moderate rise of blood pressure.

Strychnin nitrate.—1/30 gr., hypoderm., in case iv of empyema following stab wound, with normal blood pressure. *Result:* Negative.

Strychnin sulphate.—1/30 gr., hypoderm., in myocarditis, with ventricular extrasystoles and low blood pressure, case i. *Result:* Negative.

1/30 gr., hypoderm., in myocarditis, with impaired conductivity of a-v bundle and moderately high blood tension, case v. *Result:* Negative.

1/30 gr., hypoderm., in defervescent stage of typhoid fever, with very low blood pressure, case viii. *Result:* Negative.

1/30 gr., hypoderm., repeated in same case of convalescent typhoid. *Result:* Negative.

1/30 gr., hypoderm., during chloroform anæsthesia, case ix. *Result:* Doubtful.

1/30 gr., hypoderm., in acute rheumatic arthritis, with normal blood tension, case xi. *Result:* Lowered pulse rate and blood pressure.

1/30 gr., hypoderm., in last stage of transverse myelitis, with low blood pressure, case xii. *Result:* Lowered blood pressure.

1/60 gr., hypoderm., in fibroid phthisis, with low blood pressure, case xix, series iii. *Result:* Negative.

A lack of uniformity of action of most of the drugs tested at different times will be noticed in the above summary of cases, a remedy, such as atropin, exhibiting twice a decided stimulation, once failing to produce apparent effect, while twice a depression rather than a stimulation followed its use. This irregularity of action is evidently due to a difference in the irritability of the tissues of the subject under observation, a result of the pathological changes present. To ascertain the relation between these pathological changes to the character of the drug effect is the object of clinical research. While the cases here reported are entirely too few to suggest anything new regarding the general principles underlying this irregularity of drug action, yet the experiments may prove of value by leading to such inquiry as will give direction to future research.

Why, for example, should adrenalin fail of its well-known effect of cardio-vascular stimulation in case xiv of asthma, where the patient, a woman of otherwise fair health, was promptly relieved of dyspnœa, while in case xvii of pulmonary tuberculosis in articulo mortis, or in case xviii of almost robust health, its cardio-vascular action was well marked?

How explain the reduction of pulse rate and blood pressure produced by atropin in case x, verified by repetition of the dose?

Why should camphor be devoid of action in case xx of senile cardio-sclerosis, with high blood pressure, when the same dose of camphor reduced blood tension, increased the pulse rate, and reduced the a-c interval in case xxiii of chronic nephritis and cerebellar disease?

Why did nitroglycerin cause such a profound depression of the cardiac action, verified by second experiment, in case xii of transverse myelitis?

These questions, among others, suggest themselves without being satisfactorily answered, and although intimately bound with diagnosis and pathology, they should spur on to more extensive and systematic therapeutic research.

The crudity of our knowledge regarding the therapeutic effect of most of the heart stimulants should induce us to resort to their employment with the greatest caution and with the greatest possible scrutiny of result, especially as their exhibition is usually called for at a moment most critical to the patient. The evident danger in the administration of even small doses of digitalis, or its congeners, to a patient of impaired conductivity of the auriculo-ventricular bundle, or the added risk of stimulating with atropin a heart already overstimulated with a chloroform anæsthesia, will make it apparent that a remedy carelessly or ill-advisedly selected for an embarrassed heart action may lead to a most unfortunate result.

1210 Fourth Ave.

Motor Values in Speech.

Studying the motor values of words we find two interesting features:

1. Verbs (motor root-forms) are created from idea-roots to convey *past* significance in:

(a) Latin, by t, at, et, it;
(b) German, by t, te;
(c) French, by remnants of t;
(d) Japanese, by te, ta;
(e) Spanish, by id, ad;
(f) Italian, by at, ut;
(g) Slav, by l;
(h) English, by ed, t;

so that the dental sound, which is punctate, even in the "l" liquid value, gives the sense of being cut, or cut off.

2. Infinitives are formed by an "r" in many languages:

1. Latin, by are, ere, ire;
2. French, by er, ir, oir, re;
3. Italian, by are, ere;
4. Japanese, by ru;
5. Greek, by ein;
6. German, by en.

In Greek "a" (ah) and "n" were correlative. So that a broad continuing motor value corresponding to "r," indeed in some dialects equivalent to it, as in the terms Maria*hr*, sofa*hr*, Philadelphiahr (lengthening the final ah) we see a motor value for the infinitive which seems to carry on the idea as the action is prolonged.

Futurity is indicated by a profusion of methods.

Hebrew, English, German, Japanese and Slav languages do not possess a future. In the Romance languages the infinitive is the basis of future tenses, which add the stem of ***have***.

In Japanese, the suffix sho, which means life, is employed, or a word meaning I will be, aro (aru + sho?) is used, with the infinitive. This latter method in Russian gives us ya budu, I will be be, and the infinitive (with the present participles containing value).

In German, I will become, I become, I come, to be, is used with the infinitive.

In English we use I want desire (will) and I ought, must have to (shall) with the infinitive.

All these remarks bring to the fore the psychologic structure of idea-formation, and the hope of finding the mechanical basis of thought processes, which are entangled, somehow, in the gray and white matter of the central nervous system.

J. A. Gabaston (*Münch. Med. Woch.*) for retained placenta following post-partum atony injects 2 quarts of warm saline solution into the umbilical vein. Excellent results follow.

Surgery

Sarcoma of the Stomach.

Charles H. Frazier, of the University of Pennsylvania, says the stomach is one of the most unusual sites for sarcoma. The infrequency of the lesion, and the recovery of health following an extensive resection of the stomach prompt me to place my experience with a single case on record. The first case of primary sarcoma of the stomach was recorded by Bruch, in 1847, in his *Diagnose der bösartigen Geschwulste;* in 1864, Virchow referred to 3 cases, while as late as 1893 Tilger was able to collect only 20 cases. From this time on additional cases have been placed on record, and recently G. Flebbe, in an exhaustive treatise on the subject, chiefly from the pathological viewpoint, assembled 157 cases, the larger number of which, however, were discovered at autopsy. In the following statistics, sarcoma of the stomach appears to be a rather unusual lesion. Yates found in 800 stomach tumors only 2 per cent. were sarcoma; Drost and Wild, in 423 sarcomas of various structures mention but one of the stomach. Of 840 sarcomas at the Berlin Pathological Institute there is only 1 of the stomach. Tilger mentions 4 in 3,500 sarcomas. In 23 consecutive cases of primary malignant disease of the stomach, Fenwick found 2 sarcomas, Hosch 6 in 13,387 autopsies; Czerny saw 2 in 298 gastro-enterostomies, while Haberkahnt, in 207 resections of the pylorus, met with 3. Thus it may be said that of primary malignant disease of the stomach, sarcoma is represented in only 2 per cent., that only 0.25 per cent. of all sarcomas are found in the stomach, and only 0.045 per cent. of all cases coming to autopsy.—(*Am. Jour. Med. Sci.*, June.

Treatment of Precancerous Lesion of Lower Lip.

J. C. Bloodgood, of Baltimore, in discussing this condition, lays down as an invariable rule, that the etiological factor should be sought for and immediately removed. The smoker must cease smoking, the individual who carries between his lips nails or other foreign irritating material should be instructed as to the danger and advised to discontinue the practice at once. The habit of biting the lower lip should be corrected, ragged or protruding teeth filed or extracted. Individuals who use tobacco in any form (the use of snuff should not be forgotten) should be advised to discontinue it at once and be given a mouth-wash of bicarbonate of soda.

The little lesion should receive no irritating treatment, not even the mildest caustics. If there is an ulcer, it can be washed with a solution of bicarbonate of soda and covered with a non-irritating ointment. An emulsion of bismuth in castor oil or a two per cent. yellow oxide of mercury ointment has answered the purpose well in my experience. In extensive ulcerations and extensive fever blisters or chapping, the author has had good results from covering the area with silver foil as employed by Halsted for dressing wounds. This silver foil is kept in place by covering it with a little cotton fixed with collodion. Such a dressing will usually hold twenty-four hours. It should accomplish its results in a few days.

If the lesion is small, its radical local excision is not at all mutilating, and it is my opinion that such lesions should be excised if they do not heal in a week or ten days. In the more extensive lesions one is justified in waiting longer.—(*Surg., Gyn. & Obst.*, April, 1914.)

Correspondence

Slumbertown, Bromide Territory,
February 1st, 1915.

Dr. H. E. Nozit,
New York.

Dear Old Friend:—

I take my pen in hand to write you these few lines so you will know I am still able to get around and tend to work, though I have put on some flesh these past forty years. And then I want to get your advice about a case besides.

You see, about a week ago one of old man Phil Dickety's boys came in from haying with a pain in his side. His mother gave him a dose of Ol. Ricini but after he suffered a lot for three days he got so bad that I had to drive way over there to Tumble Bug Corners at 1 A. M. to see him. Say, Doc, up in New York do they always wait till afternight to send for you when they have been ailing a week? Well, I found the young fellow in a lot of pain and when I asked him to show me, he put his hand on his right lower corner, so I knowed it must be his appendix and I told the old man he had better send over to Spudville for Doc Thompson, that young fellow who just settled there from New York to do surgery. Well, long about five o'clock in the morning his Ford came rattling up with the instruments and a good-looking red-haired nurse. Thompson and me went into the house to look at the patient. I gave him the history and we put the thermometer under his arm and retired to consult. Thompson said he was glad I had called him in for this case as he had always wanted to meet me but had not had the chance. He said that in a case like this where an operation was necessary he always agreed with the diagnosis of an old practitioner like me and that he would collect my fee for assisting together with his own before doing anything. I told him he could count me out on that because I knew old man Dickety was stingy and hard up besides and he always paid me in potatoes and gave me a turkey around Christmas. By the time our toddy and pipes was finished that red-haired girl had fixed up the kitchen like it was a swell city operating room. Then we looked at the thermometer and it registered 98°. But Doc Thompson said that the worst case he had ever seen had subnormal temperature. He said there was not a minute to lose. The patient said that we hadn't looked at the place and that there was considerable swelling. So Doc Thompson gave him a kind of sudden poke, in the right lower abdomen and the patient showed pretty plain that it hurt him lots. Old man Dickety wanted to know what this operation was going to cost him and Doc Thompson said he generally got a thousand dollars for taking out an appendix in a case like this but after some discussion they compromised on fifty, twenty-nine dollars to be paid in cash and the rest to be taken out in farm stuff.

I gave the chloroform and the red-haired girl helped the doctor. When the patient was pretty sound asleep Doc Thompson palpated the abdomen and showed me how he could feel the appendix laying deep down in the right iliac fossa and he said it was about as big as a little sausage.

When the belly was opened it took quite some time to locate the appendix but at last the red-haired nurse pulled it out of the wound and Doc Thompson showed it to me. He said that he must have emptied it during his manipulation because it was three inches long and not quite as big around as a lead pencil. He said that it was considerably injected and congested and he showed me the tortuous blood vessels running over it.

Doc Thompson now removed the offending organ with great skill and closed the wound without drainage.

Old man Dickety insisted on seeing the specimen which by this time had been cut open and was shrunk considerable so that it did not make much of a show but Doc Thompson told him that often they were the worst kind and anyhow that it was better out than in.

The case was now left in my charge and I am writing you for advice about a matter that gives me some uneasiness. The day after the operation young Dickety said that he felt some better but he had a bad cramp and said the swelling was some worse than it had been. He asked his mother to go out of the room so he could show me the sore place which he said was in a different place from where he was bandaged. We turned down the bed-clothes and I noted the scrotum was badly swollen on the right side and that it was very hard and tender. I said that was all right and that it was a complication of appendicitis. Then I went home and telephoned to Spudville but Doc Thompson had gone off on a trip and would not be back for a week. Therefore, dear old friend I am writing you this letter and I beg that you will let me know if this is a common complication appendicitis or if I had better treat it as I have been used to treating cases of this kind.

I hope you and your family are well and that you will pay me that visit next spring. I often think of the happy days when we were schoolmates in old District 44.

Your friend,

ELIPHALET GRAVIDUS.

P. S. I have another case I want to ask you about but will wait some time for developments. E. G.

Tuberculosis and Infants.

Probably the greatest advance, according to A. F. Hess, New York (*Jour. A. M. A.*, Dec. 19), that has been made in the warfare against tuberculosis is the realization that tuberculosis is contracted to a large extent in early life. At the Tuberculosis Preventorium at Farmingdale, N. J., two hundred children are cared for who give a positive tuberculin reaction, but show no clinical signs of tuberculosis. They are selected by the tuberculous dispensaries of New York City from households in which some member of the family is tuberculous. At the present time they represent 120 families, and an inquiry showed that there were 42 infants under 2 years of age in the 120 homes. In many families there were two infants exposed, and those received from these families have often been exposed for months, and the number of children in these families is large. It is feasible in a few cases only to safeguard the home by sending the tuberculous parents or other members of the families away. Some child-caring institutions may care for a few of the children. The babies' hospitals will not act, because they can take only sick children. A few orphans or half orphans may be cared for outside, but if the family is not entirely destitute their admission to an institution may be difficult. Not all parents, even if tuberculous, would be willing to give their well children up to an institution, but if there was a place for them there are many that are wise enough to do so. The weak and sickly mother suffering from tuberculosis will be particularly inclined to give up her infant temporarily, and it is in her case that separation is most urgently demanded. Hess suggests that, for a beginning, to meet the need it may be advisable to assign wards for such children in existing institutions, but the details of organization cannot all be formulated in advance.

In colic it is well to remember intestinal worms as a cause.

The Physician's Library

Anoci-Association. By George W. Crile, M. D., Professor of Surgery in Western Reserve University, and William E. Lower, M. D., Associate Professor of Genito-Urinary Surgery in Western Reserve University. Edited by Amy F. Rowland. Octavo; 259 pages; 60 illustrations. Cloth, $3.00 net. Philadelphia and London: W. B. Saunders Co., 1914.

This epoch-making method is well set forth in this book. We have presented heretofore Crile's Kinetic Theory, prepounded at the last meeting of the Medical Society of the State of New York and it is elaborated upon here, as well as the experimental work leading up to formulation of anoci-association. Every surgeon will want to carefully study the underlying theories upon which the system is based. Not the least interesting is the chapter devoted to nitrous oxid-oxygen, in which it is shown that this form of anesthesia has been safely employed at Lakeside Hospital nearly 35,000 times.

The Cancer Problem. By W. S. Bainbridge, M. D., Professor of Surgery in the N. Y. Polyclinic Medical School. Cloth. 534 pages; illustrated. $4 net. New York: The Macmillan Company, 1914.

The author has performed an admirable service by collating all the facts on cancer from our widespread literature. After arranging it, he has produced an orderly and sequential volume, which shows a vast amount of study and a keenness of perception that is refreshing. The book shows that we are still in the dark as to the actual causative agent of cancer, but it holds out some cheer in the statement that a radical operation, when the focus is distinctly localized, is likely to give permanent relief.

We are hoping the day is not far distant when the cancer causing agent is definitely differentiated and the perusal of this carefully prepared book assists us in the belief that the time will soon come.

International Clinics. Edited by H. W. Cattell, M. D., of Philadelphia. Vol. 10. 24th series, 1914. Cloth. 314 pages. Illustrated. $2.00 net. Philadelphia and London: J. B. Lippincott Co., 1914.

Diagnosis and Treatment, Medicine, Surgery and Medico-legal Medicine are the headings under which the contributors to this volume are listed. A great variety of interesting articles present themselves for the satisfaction of many tastes. Simon Baruch writes instructively on the therapeutic value of water in pneumonia; Howard Kelly tells what radium can do; T. D. Crothers discusses the home treatment of inebriety; J. W. Swan presents a comprehensive study of the auscultatory method of blood pressure determination, and P. G. Skillern, Jr., writes interestingly on the Mayo Clinic. Many other papers are of value to the reader.

The Treatment of Diseases. By Reynold Webb Wilcox, M. D., L.L. D., Professor of Medicine (retired) in the New York Post Graduate Medical School. 4th edition. Cloth. 1023 pages. Philadelphia. P. Blakiston's Son & Co., 1914.

As is to be expected the fourth edition of this work reflects credit on its distinguished author. It shows that he has carefully studied the advances in the broad field of diagnosis and treatment and has extracted therefrom all which is of practical value to the prac-

(*Continued on p.* 20.)

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(*Continued from p. 106.*)

titioner. The arrangement of the subjects is admirable. The classification being such as will meet the approbation of the reader. Each disease is treated succinctly and completely. The author has decided therapeutic opinions, as befits his wide experience, and he states them unreservedly. His style is lucid and his diction elegant and his book is a medical and therapeutical guide post. Dr. Wilcox has learned the great secret of stopping when he has told his story. His book possesses the decided advantages of scientific accuracy combined with brevity of expression and clarity of style. Like its predecessors, this edition will find great favor in the medical community.

Gonorrhea and its Complications in the Male and Female. By David Watson, M. B., C. M., Surgeon, Glasgow Lock Hospital. Cloth. 395 pages. 72 illustrations, 12 plates, 9 colored. $3.75, net. New York: Paul B. Hoeber, 1914.

In the belief that the gravity of gonorrhea is not sufficiently recognized Watson has written a book which fully acquaints the reader with every phase of the disease and its sequelae. He has been impartial in discussing the pathology, symptomatology and treatment of the conditions discussed. While he offers nothing new or startling, he presents the subject in a clear, logical manner and has given the profession a book of real value from every standpoint. The colored plates are well done and the large type makes the reading a pleasure. Watson has materially added to the literature of a too little understood subject.

The Clinics of John B. Murphy, M. D., Vol. III, Nos. Nos. 4, 5 and 6, 1914. Paper, 640 pages. Illustrated. Price per annum, $8. Philadelphia and London: W. B. Saunders Co., 1914.

These three numbers constitute as interesting a trio as Dr. Murphy has presented, including, as they do, a great variety of surgical topics. No. 4 contains a valuable talk on surgical and general diagnosis of ileus and subserous uterine fibroid and on the open method of reducing old ununited Colles' fractures. A new operation for the reduction of congenital luxation of the patella is also graphically described.

In No. 5 much space is devoted to clinical talks on general and surgical diagnosis and many of the clinic in this issue various fractures and arthroplasty.

A feature of No. 6 are the pictures of the exterior and interior of Dr. Murphy's new office building in Chicago, with excellent portraits of himself and staff. The surgical diagnostic talks are conducted and ten different subjects are treated in the remainder of the issue. Volume III of Murphy's clinics surpasses the others in value to the reader.

Progressive Medicine. Vol. IV., December, 1914. Paper. 413 pages. Illustrated. Edited by H. A. Hare, M. D. Per annum, $6. Philadelphia and New York: Lea & Febiger, 1914.

The contents of this volume includes Diseases of the Digestive Tract and Allied Organs, The Liver, Pancreas, and Peritoneum, by Edward H. Goodman; Diseases of the Kidneys, by John Rose Bradford; Genito-Urinary Diseases, by Charles W. Bonney; Surgery of the Extremities, Shock, Anesthesia, Infections, Fractures and Dislocations, and Tumors, by Joseph C. Bloodgood; Practical Therapeutic Referendum, by H. R. M. Landis. Each is a comprehensive review of the subject with excellent resumes of the literature. The choice of titles during 1914 was especially happy and we know of no series which keeps the physician as well posted in all the important details of medicine and its specialties as this quarterly.

The Treatment of Sexual Impotence. By William J. Robinson, M. D. 4th edition. Cloth. 425 pages. $3.00 net. New York: Critic and Guide Co., 1914.

This fourth edition is an improvement on its predecessors, which is saying much. The book, which a few years ago would have been taboo, is now recognized as scientifically treating a subject of the greatest importance. It is thoroughly covered by a master. The book is devoted to masturbation, pollutions, spermatorrhea, prostatorrhea and urethrorrhea; sexual impotence in the male; sexual neurasthenia, sterility in male and female; sexual disorders in woman; priapism and miscellaneous topics. A careful study of this book by all physicians would prove of the greatest assistance to their patients, for it would enable medical men to unravel what seem to them mysteries, but which Dr. Robinson makes simple problems, easy of solution.

Modern Medicine. In original Contributions by American and Foreign Authors. Edited by Sir William Osler, Bart., M. D., F. R. S., Regius Professor of Medicine in Oxford University, England, and Thomas McCrae, M. D., Professor of Medicine in the Jefferson Medical College, Philadelphia. In five octavo volumes of about 1,000 pages each. Volume IV. Price per volume, cloth, $5.00, net; half morocco, $7.00, net. Philadelphia and New York: Lea & Febiger, Publishers, 1915.

No disappointment attaches to the study of this volume ant it merely strengthens our belief, expressed some time ago that the series would prove one of the greatest in the English language. This volume discusses the diseases of the circulatory system, the blood, the lymphatic system, the ductless glands, and vasomotor and trophic disorders.

While the very wealth of valuable material precludes any extended review, chapters worthy of special mention are those on Arterial and Valvular Diseases by Sir William Osler; on Insufficiency and Dilatation by Alexander G. Gibson; on Diseases of the Lymphatic Vessels and of the Lymphatic Glands by Aldred Scott Warthin; on Pernicious and Secondary Anemia, Chlorosis and Leukemia by Richard C. Cabot; on Diseases of the Adrenal Glands, the Pituitary Body and of the Thyroid Glands by George Dock; on Hodgkins' Disease by Warfield T. Longcope. The whole scope of the practice of medicine will, on the completion of this series, be contained on a 15-inch book shelf.

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